

SCS ENGINEERS

**Amended Workplan:
Additional Subsurface Investigation
and
Groundwater Monitoring Report: Third Quarter 2005**

**G.K. Hardt, Inc.
1452 Petaluma Hill Road
Santa Rosa, California**

File Number 01203307.00

Directed by:

**SCS Engineers
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To:

**Ms. Joan Fleck
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403**

14 November 2005

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14. November 2005

LIMITATIONS/DISCLAIMER

This workplan has been prepared specifically for G.K. Hardt, Inc., to address the need for additional subsurface investigation at 1452 Petaluma Hill Road, Santa Rosa, California. This work plan has been prepared in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, expressed or implied, is made as to the professional opinions presented herein. Third parties use this report at their own risk.

Access to the property and the surrounding area is limited by buildings, roadways, underground and aboveground utilities, and other miscellaneous site features. Therefore, the proposed field exploration and points of subsurface observation are somewhat restricted.

Changes in site use and conditions may occur due to manmade changes or variations in rainfall, temperature, water usage, or other factors. Additional information which was not available to the consultant at the time this workplan was prepared or changes which may occur on the site or in the surrounding area may result in modification to the site that would impact this work plan and the scope of work proposed. This work plan is not a legal opinion.

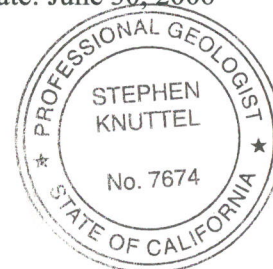
We look forward to continuing to work with you on this project and trust this report provides the information you require at this time. If you have any questions or need additional information, please call SCS at (707) 546-9461.

11.2

Kevin L. Coker
Registered Environmental Assessor #7887

11/14/05

Date
Current Expiration Date: June 30, 2006



Stephen Knuttel

Stephen Knuttel
Professional Geologist #7674

14. Nov., 2005

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SECTION 1

EXECUTIVE SUMMARY

SCS Engineers (SCS) is pleased to present this amended workplan for additional subsurface investigation for 1452 Petaluma Hill Road, Santa Rosa, California ("Hardt Site"). The purpose of this amended work is to assess the extent of the remaining petroleum hydrocarbon impact at and near the Hardt Site.

Petroleum hydrocarbon impacted soil was discovered on the Hardt Site following the removal of three gasoline USTs in 1983 and a waste oil tank in 1989. Under North Coast Regional Water Quality Control Board (NCRWQCB) oversight, accessible impacted soil on the Hardt Property was excavated to the extent practicable.

Further investigation up-gradient, cross-gradient and down-gradient of the Hardt Site is necessary in order to assess the extent of the petroleum hydrocarbon impact in the immediate vicinity of the Hardt Site so that an effective remedial action plan can be developed.

In order to fully assess the extent of the petroleum hydrocarbon impact up-gradient, down-gradient and cross-gradient of the Hardt Site offsite investigation is necessary at the present Cavaleri Transmission location on 1540 Petaluma Hill Road, which is owned by Mr. Parker ("Parker Site"); 623 Aston Avenue, which is owned by Sonoma County People for Economic Opportunity and represented by Mr. David Brigode ("SCPEO Site"); and 1426 Petaluma Hill Road, which is owned by Mrs. Norma Gleason ("Gleason Site"). SCS proposes to take samples from the Parker Site to accomplish down-gradient plume assessment. An access agreement is in place to conduct sampling on the Parker Site. SCS requests NCRWCB assistance to gain access to the up-gradient areas on the Gleason Site and the cross-gradient area at the SCPEO Site.

SCS requests NCRWQCB approval of this amended workplan to evaluate on and off-site soil and groundwater impacted by petroleum releases from the Hardt site.

SECTION 2

2.0 SITE HISTORY

The site location is illustrated on the attached Site Location Map (Figure 1). General site features are as shown on the attached Site Plan (Figure 2). A complete history of previous investigations and remedial actions to date at the Site are presented in the 24 March 2004 *Work Plan for Additional Subsurface Investigation* prepared by SCS. This workplan amends the SCS 24 March 2004 *Work Plan for Additional Subsurface Investigation*. A brief history is presented below.

2.1 SITE BACKGROUND

The Hardt Site was previously a gasoline service station last used for dispensing fuel in the early 1980's. The station building was later occupied by an automotive repair shop. Three gasoline underground storage tanks (USTs) were removed in 1983 (Figure 2). Soil or groundwater samples apparently were not collected at the time of UST removal. One 550-gallon waste oil UST was removed from the northern portion of the Hardt Site in July 1989 (Figure 2). A soil sample collected at the time of closure for the waste oil tank indicated the presence of oil and grease. The North Coast Regional Water Quality Control Board (NCRWQCB) subsequently requested a workplan for investigation at the site. All UST removals were performed by Able Maintenance of Santa Rosa, California.

Previous subsurface investigations at the Hardt Site assessed the extent of the on-site impact (Figures 3, 5, 6, & 7; Tables 1-7) and resulted in an interim remedial action plan for removal of petroleum hydrocarbon impacted soil. All accessible petroleum impacted soil at the Hardt Site was removed in stages, treated by on-site aeration and subsequently returned to the excavations or disposed off-site beginning in 1995 and concluding in October 1996. Some impacted soil remains at the southwest property boundary of the Hardt Site (Figure 5) extending beneath the sidewalk near the corner of Aston Way and Petaluma Hill Road (PNEG, 2004).

Several iterations of investigative activities have taken place in the vicinity of the Hardt Site in an effort to fully assess the extent of impact to groundwater by petroleum hydrocarbons (SCS, 2004). Additional investigation is necessary to assess the impact on the neighboring up-gradient Gleason Site, the down-gradient Parker Site and cross-gradient SCPEO Site.

Quarterly groundwater monitoring data from the Site indicates a fairly consistent southerly groundwater flow regime, ranging from south-southwest to south-southeast, at an average gradient of 0.003 (Figure 8).

2.2 SITE CONCEPTUAL MODEL

2.2.1 Regional Geology

The site is located in the southern portion of the Santa Rosa Plain, within the Coast Range Geomorphic Province of California. The Site is mapped as underlain by Quaternary age alluvium consisting of fluvial deposits deposited at the outer edges of alluvial fans and levee flood plain deposits. These deposits consist of interbedded and overlapping deposits of fine sands, silt and silty clay and poorly sorted coarse sands and gravels. Groundwater production in shallow alluvium is sporadic (Cardwell, 1958). The alluvium is underlain by the Plio-Pleistocene Petaluma Formation. The Petaluma Formation consists predominantly of claystone, siltstone, mudstone, and tuff, with sandstone and conglomerate crossbeds (Huffman & Armstrong, 1980). The shallow alluvial fan deposits of the Petaluma Formation act as a groundwater recharge area with a generally westerly groundwater flow direction toward the Russian River (California Department of Water Resources, Bulletin #118). The Tertiary Sonoma Volcanic Group underlies the Petaluma formation. The Sonoma Volcanic Group consists of intercalated rhyolitic, andesitic and basaltic lava flows and tuffs. The Sonoma Volcanic Group produces good yields for groundwater production (Cardwell, 1958). The Jurassic-Cretaceous Franciscan Complex forms the basement of the region. The Franciscan Complex consists of pervasively shattered sandstone and shale with minor limestone, greenstone, blue schist, chert, and serpentine. Groundwater production from the Franciscan Complex is generally considered poor (Cardwell, 1958).

Previous site borings have indicated that the site lithology consists of clay soil to a depth of 4 to 5 feet, underlain by sandy silt, silty sand, gravelly sand, and sandy gravel to a depth of 13 or 14 feet. The drilling programs completed in 1999 and 2002 again indicated a similar lithology, with clay to a depth of 3 or 4 feet underlain by silt to depths of roughly 6 to 8 feet. The silt is underlain by sand and gravel to depths of approximately 17 to 19 feet below existing ground surface (bgs) and is the primary water bearing near surface aquifer. In turn, the sands and gravels are underlain by silt and clay to the maximum depths explored of approximately 20.5 feet bgs.

The subsurface conditions encountered at the Site during investigations is consistent with deposits as illustrated in previous regional mapping efforts (Cardwell, 1958; Huffman & Armstrong, 1980; Wagner and Bortugno, 1982) conducted by the California Geological Survey (formerly California Division of Mines and Geology) and the US Geological Survey.

2.2.2 Regional and Site Hydrogeology

The Site is located within the Santa Rosa Hydrologic Subarea, Middle Russian River Hydrologic Area of the Russian River Hydrologic Unit (NCRWQCB, 1996). Review of the current and past boring logs indicates that the lithology surrounding the site generally consists of clay to a depth ranging from three to four feet bgs. Beneath the clay is a layer of silt with sand ranging from approximately 1 to 5 feet in thickness ranging from approximately 5 to 11 feet bgs. Below the

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silt layer is sand with gravel. First groundwater was generally encountered at about 9 to 11 feet bgs in the sand or gravel. The calculated on-site groundwater flow direction has been generally southerly to southwesterly at an average gradient of 0.004 (Table 8).

SECTION 3

3.0 GROUNDWATER MONITORING REPORT: THIRD QUARTER 2005

3.1 GROUNDWATER MONITORING

SCS reinitiated quarterly groundwater monitoring at the Hardt Site on 9 August 2005. Depth to groundwater measurements were collected on 9 August 2005 from each of the project monitoring wells with the exception of wells MW-106 and MW-107. Well MW-106 and MW-107 have been covered with asphaltic concrete by the City of Santa Rosa in repaving activities along Petaluma Hill Road. Depth to groundwater measurements ranged from approximately 5.81 to 6.41 feet below existing ground surface (bgs). The depth to groundwater measurements and well casing elevations were used to calculate groundwater flow direction and gradient. Casing and groundwater elevations are reported in feet relative to mean sea level. Depth to groundwater is expressed in feet. The groundwater flow direction for this monitoring event was interpolated as west-southwest at a calculated gradient of 0.003 (Figure 8); which is somewhat more westerly than the typical south to southwesterly flow direction historically recorded from the site (Table 8).

3.2 GROUNDWATER SAMPLING

Each well was checked for the presence of separate phase hydrocarbons (SPH) using an oil/water interface probe prior to purging. SPH was not present during this monitoring event. Each well was purged of approximately three wetted well casing volumes of groundwater, or at least five gallons, whichever was greater, or until it went dry, using a submersible pump. Temperature, pH, conductivity, dissolved oxygen, and turbidity readings were measured during purging to help demonstrate that groundwater representative of aquifer conditions was entering the well prior to sampling. Water levels in the wells were allowed to recover to approximately 80% of static levels, or for 2 hours prior to sampling. Groundwater samples were collected from the wells using a separate disposable bailer for each well. Groundwater samples were transferred to the appropriate laboratory-supplied containers for analysis. Samples were labeled, stored under refrigerated conditions, and transported under Chain-of-Custody documentation to Analytical Sciences (AS), a Department of Health Services-certified laboratory in Petaluma, California for analysis. All samples were collected following Standard Soil and Water Sampling Procedures and QA/QC Protocol. Sampling equipment was cleaned prior to use and between wells to prevent cross-contamination. Information collected during sampling activities was recorded on groundwater field sampling forms. Well Purge Records are presented in Appendix B. Purge water generated from well sampling is stored at the site in 55-gallon, UN/DOT-approved 17 E/H drums, pending characterization and disposal.

3.3 LABORATORY ANALYSIS

Groundwater samples collected from the monitoring wells were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) by EPA Method 5030/8015M and for benzene, toluene, ethylbenzene, and xylenes (BTEX) and lead scavengers by EPA Method 8260B.

3.4 GROUNDWATER ANALYTICAL RESULTS

Analytical results for the 9 August 2005 sampling event are presented below in Table A. Isoconcentration maps for TPH-g and benzene are presented as Figures 8 and 9. Data from the recent monitoring event are incorporated with historic groundwater analytical results and presented in Table 9. Groundwater analytical data for TPH-g and benzene are plotted on time versus concentration diagrams (Diagrams A and B). The laboratory analytical report is presented in Appendix C. The analytical results from the monitoring event were submitted electronically to the State Department of Water Resources Geotracker database (Appendix C).

Table A: Groundwater Analytical Results – August 2005

Well ID Number	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
	µg/l					
MW-101	1,100	5.9	<0.5	2.4	1.8	13
MW-102	220	2.6	<0.5	2.4	1.8	<2.5
MW-103	670	25	2.8	0.71	2.7	<2.5
MW-104	<50	<0.5	<0.5	<0.5	<1.5	<2.5
MW-105	77	0.61	<0.5	<0.5	<1.5	<2.5
MW-106	*	*	*	*	*	*
MW-107	*	*	*	*	*	*

* - Well inaccessible (covered with asphaltic concrete by the City of Santa Rosa in repaving activities along Petaluma Hill Road)

3.5 DISCUSSION

Groundwater analytical results from the wells for the 9 August 2005 sampling event are generally consistent with those from previous sampling events at the Site. The groundwater impact beneath the Hardt Site is primarily limited to TPH-g and BTEX. Diagrams A and B present graphical representations of TPH-g and benzene concentrations with groundwater elevation versus time. Review of groundwater elevation data presented in the diagram indicates that a seasonal fluctuation occurs with low stands of groundwater generally occurring in the latter part of summer through fall (August/September /October) and high stands of groundwater occurring in the early part of the year (January-April). There is some apparent seasonal fluctuation of contaminant concentrations though no direct correlation.

An attempt will be made before the next scheduled monitoring event to located and restore monitoring wells MW-106 and MW-107. If these wells can not be restored, they will be located, properly decommissioned, and replaced as soon as necessary permit can be secured and the work can be scheduled.

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SECTION 4

4.0 AMENDED PROPOSED INVESTIGATION

4.1 Proposed Monitoring Wells and Possible Step-out Borings

Additional investigation is required in order to evaluate groundwater conditions at the Hardt Site and in the vicinity to identify the total lateral extent of the impacted area prior to implementation of a feasibility study and remedial action plan. SCS proposes to install seven monitoring wells at the approximate locations shown on Figure 3.

Of the seven proposed monitoring wells, three wells will be installed up-gradient of the known source area on the Hardt Site (Figure 3). One of these proposed upgradient wells is located on the Gleason Site, and two of the proposed upgradient wells are located on the SCPEO Site. The additional four wells will then be installed down-gradient of the Hardt Site to further assess the lateral extent of impacted soil and groundwater.

Borings for the proposed monitoring wells will be drilled using either 8-inch or 9-inch diameter hollow stem augers. Borings will be converted into monitoring wells using 2-inch diameter Schedule 40 flush threaded PVC well casing. The screened interval in the monitoring wells will consist of 0.010-inch machine slotted screen and will extend from approximately 5 to 20 feet bgs, depending on field conditions encountered. The anticipated depth of each wellbore is approximately 20 feet, including approximately 15 feet of screen in each well. Number 2/12 sand or equivalent will be used to create a filter pack around the screen. The filter pack will be brought to approximately one foot above the top of the screen, an approximate one-foot hydrated bentonite seal will be placed on top of the sand filter pack, and the wells will be completed to the surface with a cement seal. Well completion details are presented on Figure 12.

The PVC well casing in each monitoring well will extend to within six inches bgs and will be fitted with a waterproof locking cap. The wells will be protected by traffic-rated, watertight circular vaults set in a traffic rated concrete installed approximately one-half inch above existing grade. Wells installed in sidewalks or other high foot traffic areas will be completed flush with existing grade.

To fully assess the upgradient extent of the impact, up to six step-out borings are proposed on the Gleason Site. As the western and middle upgradient wells have been proposed in areas with formerly documented impacts, a step-out boring will be drilled approximately 50 feet north-northeast (upgradient groundwater flow direction - to the extent feasible because of the building on the Gleason Site) of each proposed upgradient monitoring well. If these borings are found to be impacted, an additional step-out boring will be drilled another approximately 50 feet north of the first step-out boring. The need for each step-out boring location will be based on visual, olfactory or photoionization, and mobile laboratory results. Final step-out boring locations will be based on accessible drilling locations as determined by the on site geologist.

Step-out soil borings will be drilled using either 7-inch or 8-inch diameter hollow stem augers. Groundwater samples will be collected from these step-out borings using Hydropunch® sampling techniques. If water does not enter the Hydropunch®, the probe will be withdrawn and a grab groundwater sample will be collected directly from each of the boreholes. Upon completion of the drilling, each of the step-out soil borings will be backfilled with a low permeability material, such as cement or bentonite, as designed by the California licensed C-57 well driller.

Soil samples will be collected and examined for lithology from each of the borings beginning at an approximate depth of five feet bgs, and every five feet thereafter to a maximum depth of approximately 20 feet bgs. Soil samples for laboratory analyses from monitoring well borings and step-out borings will be collected at five-foot intervals, at obvious changes in lithology, at the groundwater interface and at obvious petroleum impacted zones. SCS anticipates collecting approximately three to four soil samples from each of the borings for analysis. The soil samples will be collected following Standard Soil and Water Sampling Procedures and QA/QC Protocol (Appendix E) and submitted to a California Department of Health Services certified analytical laboratory for the appropriate analysis. Chain-of-Custody documentation will be maintained at all times.

Downhole drilling equipment will be pressure washed between borings to prevent cross contamination between borings. Sampling equipment will also be cleaned between sampling intervals and borings to prevent cross contamination between samples and borings. Drill cuttings and water generated by decontamination, well development, and sampling will be stored at the site in labeled steel 55-gallon UN/DOT-approved 17E/H drums, pending characterization and disposal. Options for the disposal of the soil and groundwater will be evaluated once the soil and groundwater analytical results have been reported. Disposal options may include additional sampling of both containerized soil and groundwater prior to acceptance for disposal at the receiving facility.

4.2 Well Survey

The top of each new monitoring well casing will be surveyed under the supervision of a California licensed surveyor or a licensed civil engineer with surveying experience to 0.01 feet to determine its elevation relative to mean sea level. In addition, the latitude and longitude of each monitoring well will be determined to within one meter. The surveyed monitoring well elevations and monitoring well locations will be submitted electronically to the State Department of Water Resources Geotracker database.

4.3 Well Development

The monitoring wells will be developed no sooner than 48 hours after construction to allow sufficient time for well seals to set. The wells will be developed using a surge block and a submersible field portable, groundwater purging pump. The wells will be pumped then surged for approximately 35 to 40 strokes to set the filter pack, followed by pumping of the wells of approximately 5-10 wellbore volumes. Groundwater parameters for pH, temperature,

conductivity, and turbidity will be monitored to help assure that the wells are adequately developed. In the event that a well goes dry during development, the well will be allowed to recover to 80% of initial depth to water, surged and pumped in an effort to adequately develop the well.

4.4 Well Sampling

Wells will be allowed to stabilize for at least 24 hours after development prior to measuring groundwater levels. Wells will be opened, allowed to equilibrate, and depth to groundwater levels measured. The wells will be allowed to remain open for 5 to 10 minutes after which the water levels will be measured again. This process will continue until stable depth to water readings are obtained in the wells (± 0.02 feet). The wells will be pumped or bailed until approximately three to five wetted well casing volumes, or at least five gallons of groundwater have been removed, whichever is greater, or until the well goes dry. Temperature, pH, conductivity, turbidity, dissolved solids, and dissolved oxygen will also be measured, until generally stabilized ($\pm 10\%$) in effort to assure that water representative of aquifer conditions is entering the wells prior to sampling. Measurements will be taken at regular intervals during purging. Wells will be allowed to recover to 80% of static levels, or for two hours, prior to sampling.

In the event that a well remains dry after purging, it will be allowed to remain open for at least two hours after which an attempt will be made to sample the well. If the well is still dry, an attempt will be made to sample the well on the next day without purging. If the well still has not recovered, the well will be sampled during the next visit to the site by the sampler. Pre-purge samples will be collected from any well that previously purged dry that did not recover within two hours for sampling. These wells will then be purged and allowed to recover. If these wells recover sufficiently, a groundwater sample will then be collected and submitted for analysis and the pre-purge sample will be disposed without analysis. Groundwater samples for laboratory analysis will be collected using a separate disposable bailer for each well, and transferred to the appropriate laboratory supplied containers. Samples will be kept chilled and delivered to a California Department of Health certified laboratory for analysis.

Water generated by development and sampling will be stored at the Site in 55-gallon UN/DOT-approved drums, pending characterization and disposal.

4.5 Laboratory Analysis

The soil samples collected from monitoring well borings and step-out borings will be analyzed for TPH-g by EPA Method 8015M, and for benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert butyl ether (MTBE) by EPA Method 8020. Groundwater samples collected from the step-out borings and the newly installed monitoring wells, in addition to the previously installed monitoring wells will be analyzed for TPH-g by EPA Method 8015M, and for BTEX, the five ether-based oxygenates, and lead scavengers by EPA Method 8260.

4.6 Reporting

The newly installed monitoring wells will be sampled initially and the results will be presented along with the results of any step-out borings in a report of investigation once all analytical and survey results are received. The wells will then be incorporated as part of the quarterly monitoring program for the Site. If the wells are installed within a several week period of time prior to the next scheduled quarterly monitoring event, the wells will be incorporated as part of the regularly scheduled quarterly monitoring program. Subsequent monitoring will continue for a period of one hydrologic cycle after installation. An annual report will be submitted upon completion of sampling for one hydrologic cycle. The annual report will include recommendations for changes to the monitoring program, additional investigation, and corrective actions, as appropriate.

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SECTION 5

5.0 SCHEDULE

The work proposed herein will be performed upon receipt of NCRWQCB approval, and upon receipt of the necessary drilling and encroachment permits, and access agreements for work plan implementation. SCS has obtained an agreement for access to the Parker Site. The owners of the Gleason Site and the SCPEO Site have not yet agreed to access and SCS is requesting NCRWQCB's assistance to gain access to these properties.

SECTION 6
6.0 REFERENCES

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Geological Survey Regional Geologic Map Series Map No. 2A.

G.K. Hardt, Inc. - File No. 01203307.00
Amended Workplan: Additional Subsurface Investigation and Groundwater Monitoring Report: Third Quarter
2005

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File No. 01203307.00

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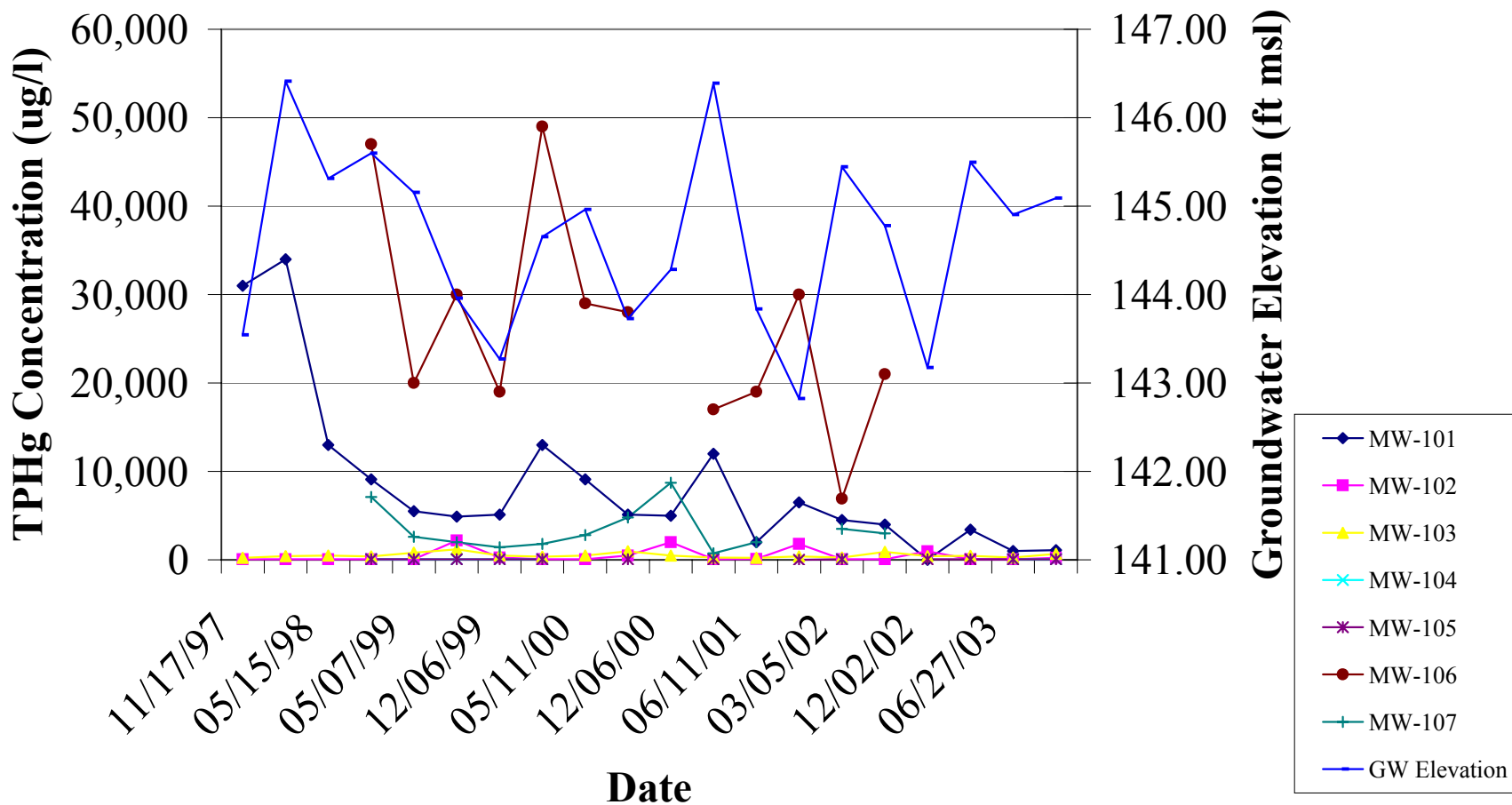
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Tables

Key to Diagrams and Tables
1452 Petaluma Hill Road, Santa Rosa

TPH-g	=	Total petroleum hydrocarbons in the gasoline range
TPH-d	=	Total petroleum hydrocarbons in the diesel range
TPH-mo	=	Total petroleum hydrocarbons in the motor oil range
MTBE	=	Methyl tertiary butyl ether
mg/kg	=	Milligrams per kilogram
$\mu\text{g/L}$	=	Micrograms per liter
ND	=	Not detected
NA	=	Not analyzed
NM	=	Not measured
msl	=	Mean sea level



SCS ENGINEERS

434 7TH STREET, SUITE B
EUREKA, CALIFORNIA
PH: (707) 476.1590 FX: (707) 476.1589

Drawn By: KWF

TPH-g & Groundwater Elevation vs. Time

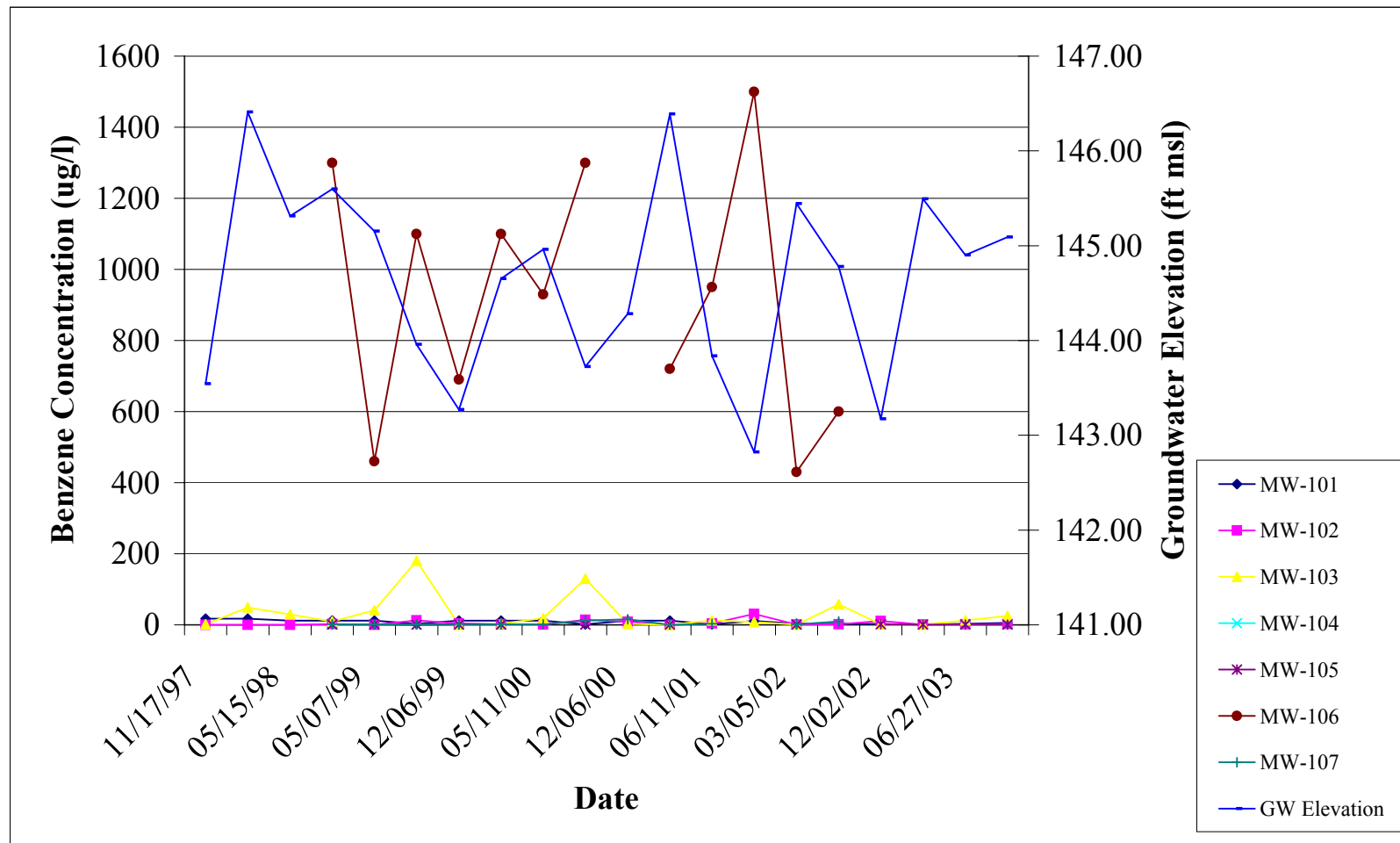
G.K. Hardt Site
1452 Petaluma Hill Road
Santa Rosa, California

Job Number: 01203307.00

DIAGRAM

A

DATE: 10/4/05



SCS ENGINEERS

434 7TH STREET, SUITE B
EUREKA, CALIFORNIA
PH: (707) 476.1590 FX: (707) 476.1589

Drawn By: KWF

Benzene & Groundwater Elevation vs. Time

G.K. Hardt Site
1452 Petaluma Hill Road
Santa Rosa, California

Job Number: 01203307.00

DIAGRAM

B

DATE: 10/4/05

Table 1: Initial Post Excavation Soil Analytical Results - 1995
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Sample ID	Sample Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes
		-----mg/kg-----				
1452 PHR-B1-13'	06/20/95	<1.0	<0.005	0.010	<0.005	0.012
1452 PHR-SW2-10'	06/20/95	71	<0.10	1.6	1.0	3.1
1452 PHR-SW3-10'	06/20/95	<1.0	<0.005	<0.005	<0.005	<0.005
1452 PHR-B4-13'	06/20/95	<1.0	<0.005	<0.005	<0.005	<0.005
1452-PHR-Hot Spot	11/16/95	2,800	16	130	65	200

Table 2: Off-Site Boring Soil Analytical Results - 1996
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Sample ID	Sample Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes
		-----mg/kg-----				
B-101-5'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-101-10'	06/27/96	<1.0	0.012	<0.005	<0.005	<0.005
B-102-5'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-102-10'	06/27/96	1,400	<0.005	22	24	110
B-103-5'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-103-10'	06/27/96	120	<0.5	0.85	1.4	4.7
B-104-5'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-104-8'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-105-5'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-105-7.5'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-106-5'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-106-8'	06/27/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-107-5'	07/01/96	22	<0.025	0.089	0.068	0.57
B-107-9'	07/01/96	2,300	<25	66	64	290
B-108-5'	07/01/96	<1.0	0.016	<0.005	0.010	0.033
B-108-9'	07/01/96	1,400	<10	25	22	100
B-109-5'	07/01/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-109-9'	07/01/96	500	<2.5	4.8	13	55
B-110-5'	07/01/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-110-8'	07/01/96	<1.0	0.0066	<0.005	0.012	0.025
B-111-5'	07/01/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-111-8'	07/01/96	1,300	<2.5	3.3	3.1	28
B-112-5'	07/01/96	<1.0	<0.005	<0.005	<0.005	<0.005
B-112-7'	07/01/96	<1.0	<0.005	<0.005	<0.005	<0.005

Table 3: Off-Site Boring Groundwater Analytical Results - 1996
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Sample ID	Sample Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes
		-----µg/L-----				
B-104-Water	06/27/96	45,000	<30	88	3,800	10,000
B-105-Water	06/27/96	88,000	5,800	8,600	3,400	10,000
B-106-Water	06/27/96	360	4.7	<0.3	0.95	1.1
B-110-Water	07/01/96	120,000	1,200	1,000	4,700	18,000
B-111-Water	07/01/96	15,000	48	38	36	1,100
B-112-Water	07/01/96	12,000	3,000	59	600	190

Table 4: Post Excavation Soil Analytical Results - 1996
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Sample Number	Sample I.D.	Sample Date	TPH-g	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			-----mg/kg-----					
5	1452PHR-SW5-10'	09/24/96	59	NA	ND	0.58	0.53	1.6
6	1452PHR-SW6-10'	09/24/96	5.3 ¹	NA	ND	ND	0.028	0.088
7	1452PHR-B7-15'	09/24/96	ND	NA	ND	ND	ND	0.021
8	1452PHR-SW-8-11'	09/30/96	28	NA	ND	0.66	0.59	2.1
9	1452PHR-B-9-17'	09/30/96	ND	NA	ND	0.0055	0.0051	0.012
10	1452PHR-SW-10-12'	10/03/96	2.4	ND	0.031	0.0096	0.056	0.033
11	1452PHR-B-11-15'	10/03/96	ND	ND	ND	ND	ND	ND
12	1452PHR-SW-12-11'	10/04/96	410	4.3	ND	0.79	3.3	24
13	1452PHR-SW-13-11'	10/04/96	1,900	ND	ND	8.6	18	130
14	1452PHR-B-14-15'	10/04/96	3.6	ND	ND	0.016	0.026	0.13
15	1452PHR-SW-15-12'	10/04/96	67	ND	ND	0.059	0.68	3.0
16	1452PHR-B-16-14'	10/04/96	ND	ND	ND	ND	ND	ND
17	1452PHR-SW-17-12'	10/08/96	2,500	ND	ND	15	33	190
18	1452PHR-B-18-14'	10/08/96	ND	ND	ND	ND	ND	ND
20	1452PHR-B-20-14'	10/08/96	6.6	ND	0.0074	0.15	0.080	0.67
21	1452PHR-SW-21-11'	10/09/96	ND	ND	ND	ND	ND	ND
22	1452PHR-B-22-15'	10/09/96	ND	ND	ND	ND	ND	ND
23	1452PHR-B-23-15'	10/09/96	ND	ND	0.012	0.0077	0.015	0.056
24	1452PHR-SW-24-11'	10/14/96	ND	ND	ND	ND	ND	ND
26	1452PHR-B-26-14'	10/14/96	ND	ND	ND	ND	ND	ND
27	1452PHR-B-27-15'	10/14/96	ND	ND	ND	ND	ND	ND
29	1452PHR-B-29-15'	10/14/96	ND	ND	0.038	0.016	0.028	0.042
30	1452PHR-SW-30-12'	10/14/96	230	ND	ND	1.7	1.7	11
31	1452PHR-B-31-15'	10/14/96	ND	ND	0.0054	ND	ND	ND
33	1452PHR-SW-33-12'	10/16/96	790	ND	ND	2.3	3.8	39
34	1452PHR-B-34-14'	10/16/96	1.6	ND	0.23	0.11	0.043	0.15
35	1452PHR-SW-35-12'	10/16/96	1,100	ND	1.2	18	12	83
36	1452PHR-B-36-16'	10/16/96	ND	ND	ND	ND	ND	ND
37	1452PHR-SW-37-12'	10/16/96	1,500	ND	1.0	30	17	130
39	1452PHR-B-39-15'	10/17/96	ND	ND	ND	ND	ND	ND
41	1452PHR-41-B-15'	10/19/96	ND	ND	ND	ND	ND	ND
42	1452PHR-42-SW-13'	10/19/96	ND	ND	ND	ND	ND	ND

1 - Non-typical for TPH-g

Table 5: Off-Site Boring Soil Analytical Results - 1997
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Sample Number	Date Sampled	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		-----mg/kg-----					
MW-102-10'	11/03/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-103-10'	11/04/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-113-10'	11/04/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-114-10'	11/04/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-115-10'	11/04/97	1,000	0.31	22	18	100	<10
B-116-10.5'	11/05/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-117-10.5'	11/05/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-118-10'	11/05/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-119-10'	11/05/97	2,800	<0.5	2.6	12	46	<20
B-120-10'	11/05/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0

Table 6: Off-Site Boring Groundwater Analytical Results - 1997
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Sample Number	Date Sampled	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		-----µg/L-----					
B-113-Water	11/04/97	11,000	2,400	50	610	60	<90
B-114-Water-Grab	11/04/97	<50	<0.3	<0.3	<0.5	<0.5	<1.0
B-115-Water-Grab	11/04/97	230,000	17,000	36,000	5,300	25,000	470
B-116-Water	11/05/97	1,800	360	4.4	3.8	5.5	<9.0
B-117-Water	11/05/97	9,100	2,200	35	200	97	<90
B-118-Water	11/05/97	1,900	320	2.1	1.6	1.1	<1.0
B-119-Water-Grab	11/05/97	49,000	82	240	510	1,300	<90
B-120-Water	11/05/97	8,100	<0.9	9.0	260	72	13

Table 7: Off-Site Monitoring Well Soil Analytical Results - 1999
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Sample ID	Date Sampled	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		-----mg/kg-----					
MW-104-10'	01/26/99	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-105-5'	01/27/99	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-105-10'	01/27/99	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-107-10'	01/27/99	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0

Table 8: Groundwater Flow Direction and Gradient
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Well ID	Date Measured	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-101	11/17/97	151.75	8.26	143.49	S15°E i = 0.006
MW-102		150.94	6.37	144.57	
MW-103		151.05	8.39	142.66	
MW-101	02/20/98	151.75	5.07	146.68	S5°E i = 0.007
MW-102		150.94	3.78	147.16	
MW-103		151.05	5.66	145.39	
MW-101	05/15/98	151.75	6.20	145.55	Due South i = 0.004
MW-102		150.94	5.20	145.74	
MW-103		151.05	6.40	144.65	
MW-101	02/05/99	151.70	6.85	144.85	S 20°E i = 0.021
MW-102		150.97	5.74	145.23	
MW-103		151.13	6.93	144.20	
MW-104		151.69	6.67	145.02	
MW-105		150.48	5.87	144.61	
MW-106		151.00	5.90	145.10	
MW-107		150.83	5.65	150.18	
MW-101	05/07/99	151.70	6.48	145.22	S 10°W i = 0.004
MW-102		150.97	5.61	145.36	
MW-103		151.13	6.55	144.58	
MW-104		151.69	6.28	145.41	
MW-105		150.48	5.73	144.75	
MW-106		151.00	5.63	145.37	
MW-107		150.83	5.45	145.38	
MW-101	08/05/99	151.70	7.70	144.00	S 20°E i = 0.005
MW-102		150.97	6.83	144.14	
MW-103		151.13	7.54	143.59	
MW-104		151.69	7.61	144.08	
MW-105		150.48	6.82	143.66	
MW-106		151.00	6.91	144.09	
MW-107		150.83	6.69	144.14	
MW-101	12/06/99	151.70	8.40	143.30	S 10°W i = 0.002
MW-102		150.97	7.59	143.38	
MW-103		151.13	8.07	143.06	
MW-104		151.69	8.33	143.36	
MW-105		150.48	7.47	143.01	
MW-106		151.00	7.62	143.38	
MW-107		150.83	7.42	143.41	

Table 8: Groundwater Flow Direction and Gradient
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Well ID	Date Measured	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-101	02/08/00	151.70	7.11	144.59	S 10°W i = 0.004
MW-102		150.97	5.98	144.99	
MW-103		151.13	7.05	144.08	
MW-104		151.69	6.97	144.72	
MW-105		150.48	6.07	144.41	
MW-106		151.00	6.17	144.83	
MW-107		150.83	5.89	144.94	
MW-101	05/11/00	151.70	6.69	145.01	S5°E i = 0.002
MW-102		150.97	5.82	145.15	
MW-103		151.13	6.65	144.48	
MW-104		151.69	6.50	145.19	
MW-105		150.48	5.90	144.58	
MW-106		151.00	5.87	145.13	
MW-107		150.83	5.65	145.18	
MW-101	08/04/00	151.70	7.88	143.82	S 10°W i = 0.002
MW-102		150.97	7.16	143.81	
MW-103		151.13	7.67	143.46	
MW-104		151.69	7.74	143.95	
MW-105		150.48	7.16	143.32	
MW-106		151.00	7.13	143.87	
MW-107		150.83	6.98	143.85	
MW-101	12/06/00	151.70	8.46	143.24	S25°W i = 0.001
MW-102		150.97	7.75	143.22	
MW-103		151.13	8.07	143.06	
MW-104		151.69	8.39	143.30	
MW-105		150.48	7.58	142.90	
MW-106		151.00	NM	151.00	
MW-107		150.83	7.58	143.25	
MW-101	03/09/01	151.70	6.23	145.47	S15°W i = 0.004
MW-102		150.97	5.08	145.89	
MW-103		151.13	6.33	144.80	
MW-104		151.69	NM	151.69	
MW-105		150.48	5.17	145.31	
MW-106		151.00	5.27	145.73	
MW-107		150.83	4.99	145.84	

Table 8: Groundwater Flow Direction and Gradient
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Well ID	Date Measured	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-101	06/11/01	151.70	7.77	143.93	S20°W i = 0.002
MW-102		150.97	7.00	143.97	
MW-103		151.13	7.52	143.61	
MW-104		151.69	NM		
MW-105		150.48	6.94	143.54	
MW-106		151.00	7.02	143.98	
MW-107		150.83	6.84	143.99	
MW-101	9/7/2001	151.70	8.78	142.92	S25°W i = 0.003
MW-102		150.97	8.05	142.92	
MW-103		151.13	8.38	142.75	
MW-104		151.69	Well Inaccessible		
MW-105		150.48	7.90	142.58	
MW-106		151.00	8.05	142.95	
MW-107		150.83	Well Inaccessible		
MW-101	3/5/2002	151.70	6.22	145.48	Southerly i = 0.003
MW-102		150.97	5.31	145.66	
MW-103		151.13	6.20	144.93	
MW-104		151.69	6.05	145.64	
MW-105		150.48	5.35	145.13	
MW-106		151.00	5.40	145.60	
MW-107		150.83	5.17	145.66	
MW-101	6/4/2002	151.70	6.83	144.87	Southwesterly i = 0.002
MW-102		150.97	6.09	144.88	
MW-103		151.13	6.68	144.45	
MW-104		151.69	6.67	145.02	
MW-105		150.48	6.09	144.39	
MW-106		151.00	6.09	144.91	
MW-107		150.83	5.90	144.93	
MW-101	12/2/2002	151.70	8.33	143.37	Southwesterly i = 0.002
MW-102		150.97	7.75	143.22	
MW-103		151.13	7.94	143.19	
MW-104		151.69	Well inaccessible		
MW-105		150.48	7.57	142.91	
MW-106		151.00	Well inaccessible		
MW-107		150.83	Well inaccessible		

Table 8: Groundwater Flow Direction and Gradient
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Well ID	Date Measured	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-101	3/3/2003	151.70	5.99	145.71	Southwesterly i = 0.003
MW-102		150.97	5.17	145.80	
MW-103		151.13	5.98	145.15	
MW-104		151.69	Well inaccessible		
MW-105		150.48	5.16	145.32	
MW-106		151.00	Well inaccessible		
MW-107		150.83	Well inaccessible		
MW-101	6/27/2003	151.70	6.64	145.06	Southwesterly i = 0.002
MW-102		150.97	5.87	145.10	
MW-103		151.13	6.54	144.59	
MW-104		151.69	6.46	145.23	
MW-105		150.48	5.95	144.53	
MW-106		151.00	Well inaccessible		
MW-107		150.83	Well inaccessible		
MW-101	8/9/2005	151.70	6.41	145.29	West-southwest i = 0.003
MW-102		150.97	5.81	145.16	
MW-103		151.13	6.15	144.98	
MW-104		151.69	6.22	145.47	
MW-105		150.48	5.93	144.55	
MW-106		151.00	Well inaccessible		
MW-107		150.83	Well inaccessible		

Note: Groundwater flow direction rounded to nearest 5 degrees.

Table 9: Groundwater Analytical Results
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Well ID	Date Sampled	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		-----µg/L-----					
MW-101	11/17/97	31,000	17	0.01	2,600	4,400	<90
	02/20/98	34,000	17	<12	1,700	3,100	<90
	05/15/98	13,000	<12	<12	1,000	1,000	<90
	02/05/99	9,100	<12	<12	940	800	<80
	05/07/99	5,500	ND	ND	380	310	ND
	08/05/99	4,900	3.5	<2.4	450	310	<16
	12/06/99	5,100	<12	<12	530	<35	<80
	02/08/00	13,000	<12	<12	1,100	650	<80
	05/11/00	9,100	<12	<12	750	450	<80
	08/04/00	5,100	1.9	<1.2	530	360	<15
	12/06/00	5,000	ND	ND	580	300	ND
	03/09/01	12,000	<12	<12	1,600	630	<87
	06/11/01	2,000	<1.2	<1.2	360	200	<9.0
	09/07/01	6,500	<11	<11	560	330	<87
	03/05/02	4,500	3.2	2.1	670	270	14
	06/04/02	4,000	<3.0	<3.0	280	160	8.8
	12/02/02	<50	<2.2	<2.2	260	120	<17
	03/03/03	3,400	<1.0	<1.0	200	96	6.7
	06/27/03	1,000	<3.0	<3.0	49	29	<5.0
	8/9/2005	1,100	5.8	<0.5	100	32	13
MW-102	11/17/97	71	<0.3	<0.3	<0.5	<0.5	<1.0
	02/20/98	<50	<0.3	<0.3	<0.3	0.78	<1.0
	05/15/98	<50	<0.3	<0.3	<0.5	<0.5	<1.0
	02/05/99	68	2.1	2.6	2.2	8.2	<1.0
	05/07/99	ND	ND	ND	ND	ND	ND
	08/05/99	2,200	13	12	100	93	<8.0
	12/06/99	270	3.8	1.7	13	5.5	<2.0
	02/08/00	68	1.6	2.3	2.6	7.7	<1.0
	05/11/00	50	0.96	1.3	1.6	4.9	<1.0
	08/04/00	470	14	3.5	13	19	<1.0
	12/06/00	2,000	9.0	ND	120	23	ND
	03/09/01	<50	<0.3	<0.3	0.57	<0.5	<1.0
	06/11/01	92	4.3	1.1	3.3	4.0	1.0
	09/07/01	1,800	31	<3.7	59	20	<9.0
	03/05/02	<50	<1.0	0.53	0.92	1.5	<1.0
	06/04/02	69	1.2	0.35	1.3	1.3	0.96
	12/02/02	970	11	<0.54	3.8	4.4	<4.3
	03/03/03	<50	<0.5	<0.5	<0.5	<1.5	<2.5
	06/27/03	55	1.3	0.36	0.72	<0.5	0.54
	8/9/2005	220	2.6	<0.5	2.4	1.8	<2.5

Table 9: Groundwater Analytical Results
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Well ID	Date Sampled	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		-----µg/L-----					
MW-103	11/17/97	240	<1.5	<1.5	<2.5	<2.5	<2.0
	02/20/98	430	49	1.2	65	1.9	1.9
	05/15/98	490	29	<1.2	<1.5	2.4	<9.0
	02/05/99	370	9.7	3.0	2.7	9.2	<8.0
	05/07/99	800	41	3.2	7.1	18	ND
	08/05/99	1,200	180	1.9	1.8	6.1	<8.0
	12/06/99	480	<0.3	0.87	1.3	2.5	2.7
	02/08/00	360	2.9	4.8	0.55	1.6	4.1
	05/11/00	470	19	6.1	7.1	20	<8.0
	08/04/00	960	130	1.4	1.6	8.5	<3.0
	12/06/00	470	3.1	ND	0.77	ND	2.8
	03/09/01	250	<0.3	<0.3	1.6	1.0	2.2
	06/11/01	220	13	0.72	0.62	2.9	1.2
	09/07/01	380	7.9	<0.3	2.3	2.1	8.3
	03/05/02	260	0.73	0.5	0.69	2.0	3.0
	06/04/02	910	58	1.9	1.2	6.3	4.4
	12/02/02	430	<1.2	<0.71	<0.50	<1.0	11
	03/03/03	460	<0.5	<0.5	<0.5	<1.5	4.7
	06/27/03	270	13	<3.0	<5.0	<5.0	<5.0
	8/9/2005	670	25	2.8	0.71	2.7	<2.5
MW-104	02/05/99	<50	<0.3	0.38	1.2	2.0	2.8
	05/07/99	ND	ND	ND	ND	ND	1.6
	08/05/99	ND	0.42	<0.3	<0.5	0.98	1.8
	12/06/99	<50	<0.3	0.51	1.8	1.9	4.1
	02/08/00 ¹	<50	<0.3	0.39	2.0	2.3	2.9
	03/09/01	Well inaccessible					
	06/11/01	Well inaccessible					
	09/07/01	Well inaccessible					
	03/05/02	<50	<1.0	0.6	<1.0	<1.0	7.2
	12/02/02	Well inaccessible					
	03/03/03	Well inaccessible					
	06/27/03	<50	<0.3	0.43	<0.5	<0.5	2.3
	8/9/2005	<50	<0.5	<0.5	<0.5	<1.5	<2.5

Table 9: Groundwater Analytical Results
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Well ID	Date Sampled	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		-----µg/L-----					
MW-105	02/05/99	<50	0.59	0.52	<0.5	1.5	<1.0
	05/07/99	ND	ND	ND	ND	ND	ND
	08/05/99	<50	0.31	0.41	0.67	1.6	<1.0
	12/06/99	<50	<0.3	<0.3	<0.5	0.74	<1.0
	02/08/00	<50	0.79	1.2	1.2	3.5	<1.0
	05/11/00 ²	NA	NA	NA	NA	NA	NA
	08/04/00	<50	0.42	<0.3	1.1	4.8	<1.0
	12/06/00 ²	NA	NA	NA	NA	NA	NA
	03/09/01	<50	0.9	<0.3	<0.5	<0.5	<1.0
	09/07/01	NS	NS	NS	NS	NS	NS
	03/05/02	<50	<1.0	0.65	1.1	1.8	<1.0
	12/02/02	72	1.9	<0.43	<0.50	<0.50	<1.0
	03/03/03	<50	<0.5	<0.5	<0.5	<1.5	<2.5
	06/27/03	<50	0.4	<0.3	<0.5	<0.5	<0.5
	8/9/2005	77	0.61	<0.5	<0.5	<1.5	<2.5
MW-106	02/05/99	47,000	1,300	2,000	1,600	6,600	<80
	05/07/99	20,000	460	440	860	2,800	ND
	08/05/99	30,000	1,100	720	1,300	4,400	<80
	12/06/99	19,000	690	290	1,000	2,100	<80
	02/08/00	49,000	1,100	840	1,900	5,800	<80
	05/11/00	29,000	930	650	1,400	4,100	<80
	08/04/00	28,000	1,300	320	1,600	3,700	<80
	12/06/00	Well inaccessible					
	03/09/01	17,000	720	410	1,000	2,600	<87
	06/11/01	19,000	950	290	1,800	3,300	<87
	09/07/01	30,000	1,500	220	3,000	3,300	<170
	03/05/02	6,900	430	280	760	1,700	<10
	06/04/02	21,000	600	280	1,400	2,400	<50
	12/02/02	Well inaccessible					
	03/03/03	Well inaccessible					
	06/27/03	Well inaccessible					
	8/9/2005	Well inaccessible					

**Table 9: Groundwater Analytical Results
G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California**

Well ID	Date Sampled	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		-----µg/L-----					
MW-107	02/05/99	7,100	<1.2	3.1	75	180	<8.0
	05/07/99	2,600	ND	ND	54	79	ND
	08/05/99	2,000	<1.2	<1.2	26	30	<8.0
	12/06/99	1,400	2.4	5.4	36	39	<8.0
	02/08/00	1,800	1.5	1.4	29	32	<8.0
	05/11/00	2,800	ND	ND	41	33	<8.0
	08/04/00	4,800	12	4.3	310	270	<15
	12/06/00	8,700	16	18	600	320	ND
	03/09/01	750	<0.3	<0.3	9.8	3.9	<1.0
	06/11/01	2,000	2.9	<1.2	130	35	<9.0
	09/07/01	Well inaccessible					
	03/05/02	3,500	1.4	1.5	64	9.5	1.2
	06/04/02	3,000	9.2	<3.0	130	<5.0	<5.0
	12/02/02	Well inaccessible					
	03/03/03	Well inaccessible					
	06/27/03	Well inaccessible					
	8/9/2005	Well inaccessible					

1 - MW-104 Adjusted to an annual sampling schedule after 02/08/00 sampling event.

2 - MW-105 has been adjust4ed to a semi-annual sampling schedule.

Table 10: Soil Analytical Results - 2002
SCPEO Site Adjacent to G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

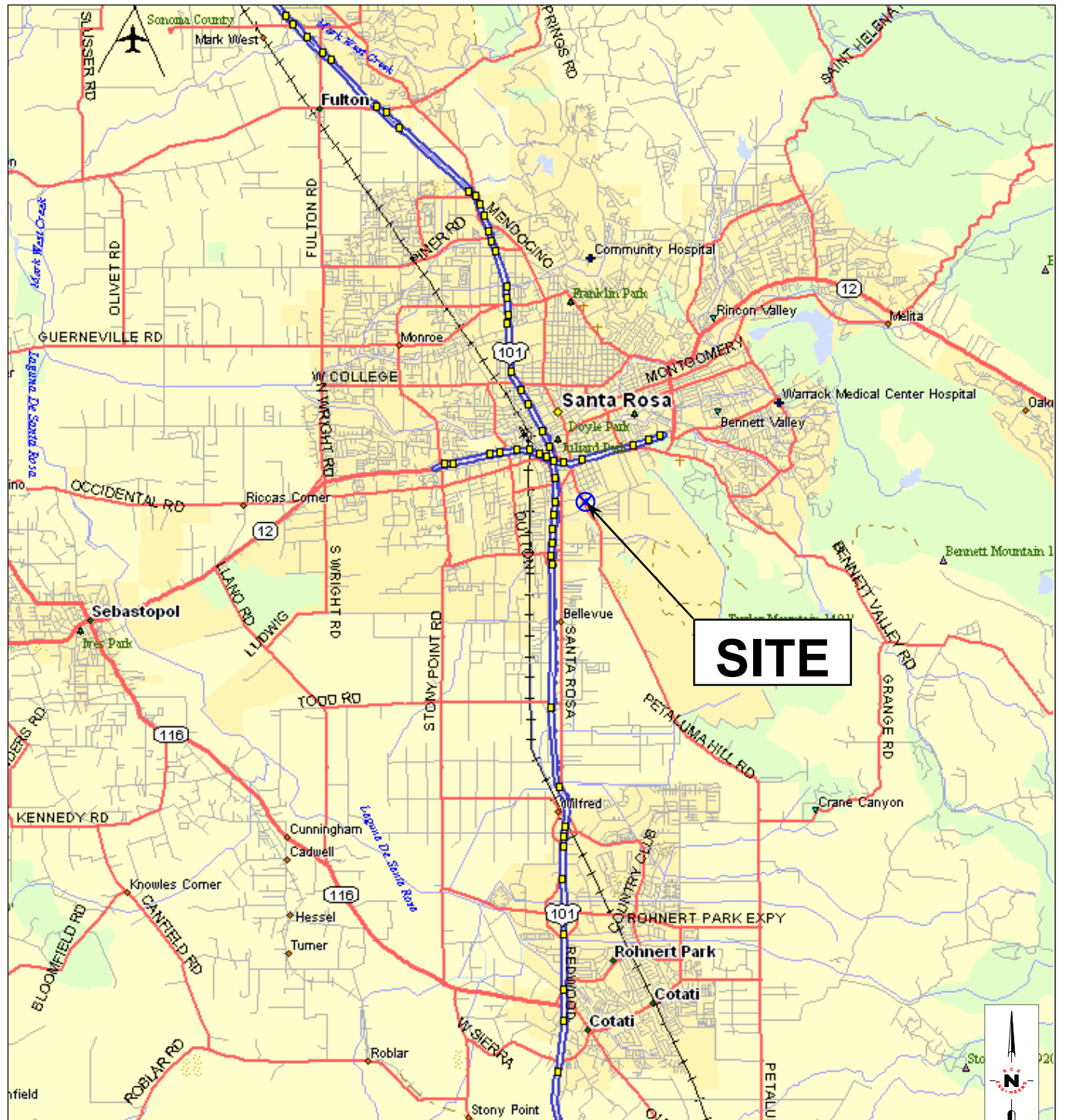
Boring ID	Sample Date	TPH-g	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
		-----mg/kg-----					
B-201-7'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-201-11.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-202-7'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-202-11'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-203-7.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-203-11'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-204-7.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-204-11.5'	08/14/02	180	<0.50	<0.10	0.30	1.2	1.0
B-205-7.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-205-11.5'	08/14/02	310	<0.50	<0.10	0.22	3.1	5.3
B-206-11.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-207-11.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-208-11.5'	08/14/02	310	<0.50	0.96	0.96	3.1	3.2
B-209-11.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-210-11.5'	08/14/02	10	<0.025	0.010	0.018	0.008	0.042
B-211-11.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015
B-212-11.5'	08/14/02	<1.0	<0.025	<0.005	<0.005	<0.005	<0.015

Table 11: Groundwater Analytical Results -2002
SCPEO Site Adjacent to G. K. Hardt Site
1452 Petaluma Hill Road, Santa Rosa, California

Boring ID	Sample Date	TPH-g	MTBE ¹	Benzene	Toluene	Ethylbenzene	Xylenes	Pb Scavs
		-----µg/L-----						
B-201-Water	8/14/2002	590	1.2	<1.0	<1.0	<1.0	<1.0	<1.0
B-202-Water	08/14/02	11,000	<5.0	<5.0	<5.0	41	<5.0	<5.0
B-203-Water	08/14/02	3,900	<1.0	2.3	<1.0	3.3	<1.0	<1.0
B-204-Water	08/14/02	36,000	<50	<50	<50	2,200	1,100	<50
B-205-Water	08/14/02	58,000	<50	58	<50	4,000	10,400	<50
B-206-Water	08/14/02	1,600	<1.0	1.4	<1.0	22	5.5	<1.0
B-207-Water	08/14/02	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-208-Water	08/14/02	20,000	<10	10	<10	1,300	710	<10
B-209-Water	08/15/02	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-210-Water	08/14/02	3,100	<1.0	2.7	<1.0	7.4	<1.0	<1.0
B-211-Water	08/15/02	<64	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-212-Water	08/15/02	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

1 - Other ether-based oxygenates not detected.

Figures



Source of Base Map: DELORME 2000®

SCS ENGINEERS

3645 WESTWIND BOULEVARD
SANTA ROSA, CA 95403
PH. (707) 546-9461 FAX (707) 544-5769

PROJ. NO:	TAKEN BY:	FILE:
01203307.00		3307SiteLocMap
DATE:	CREATED BY:	APP. BY:
9/15/05	JJM	KWF

SITE LOCATION MAP

G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

APPROX. SCALE

(MILES)

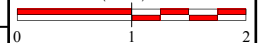
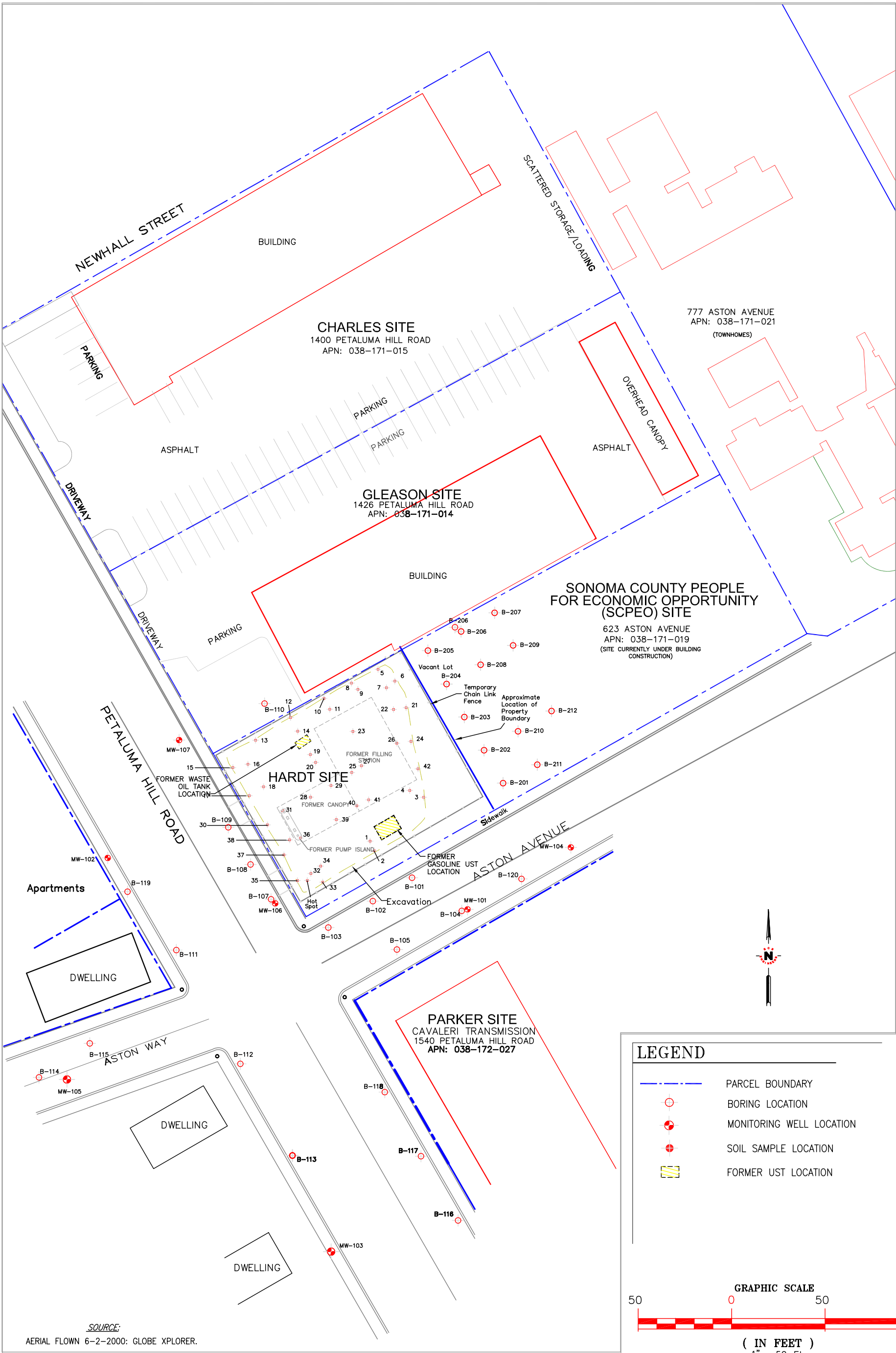


FIGURE:

1



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3645 WESTWIND BOULEVARD
SANTA ROSA, CALIFORNIA
PH: (707) 546-9461 FAX: (707) 544-5769

PROJ. NO:
1203307.00

DATE
9/7/05

DWN. BY:
JJM/AJH

CHK. BY:
KWF

ACAD. FILE:
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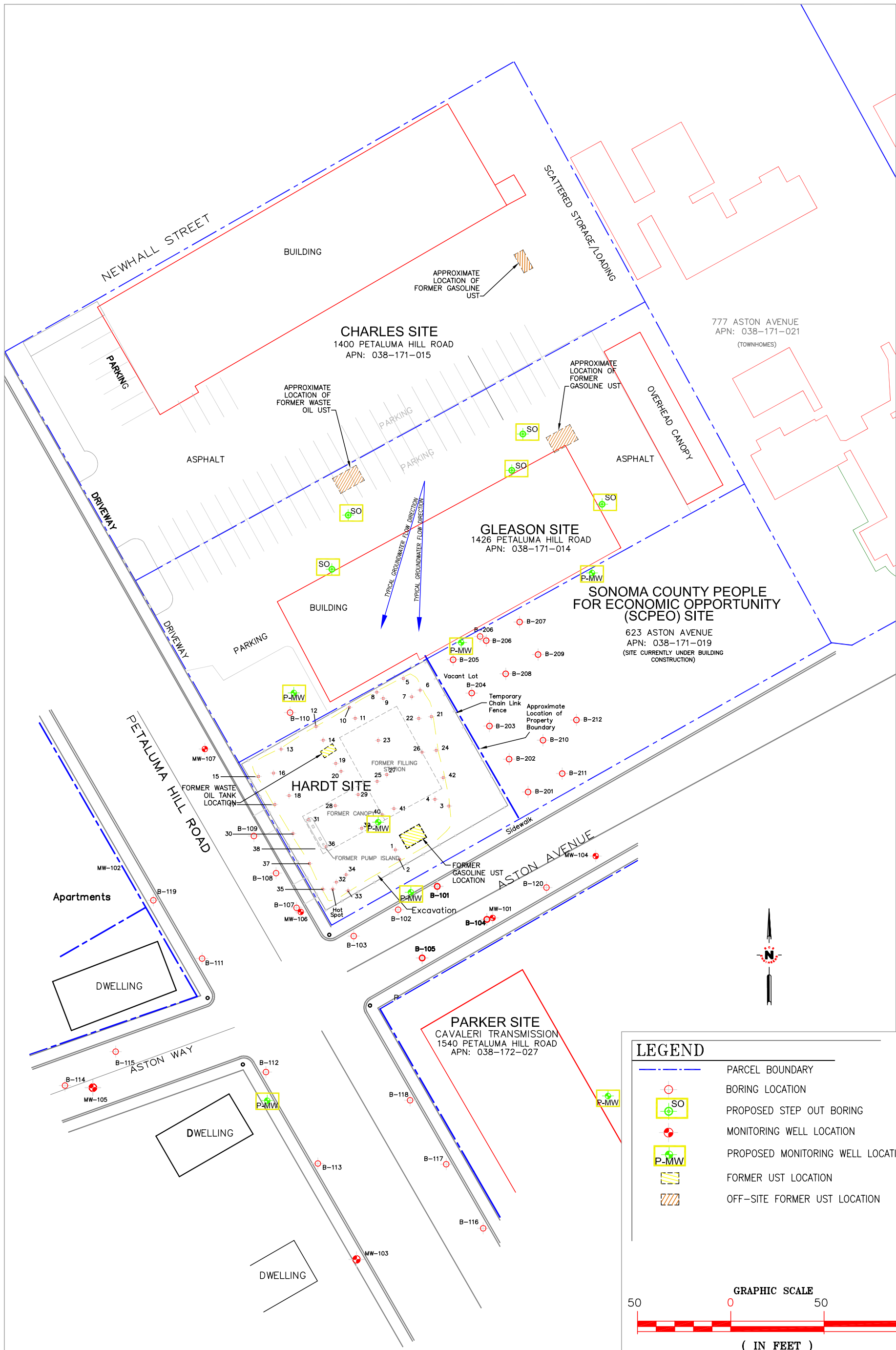
APP. BY:
KWF

SHEET TITLE
SITE PLAN WITH SAMPLING, MONITORING WELL AND BORING LOCATIONS

PROJECT TITLE
G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

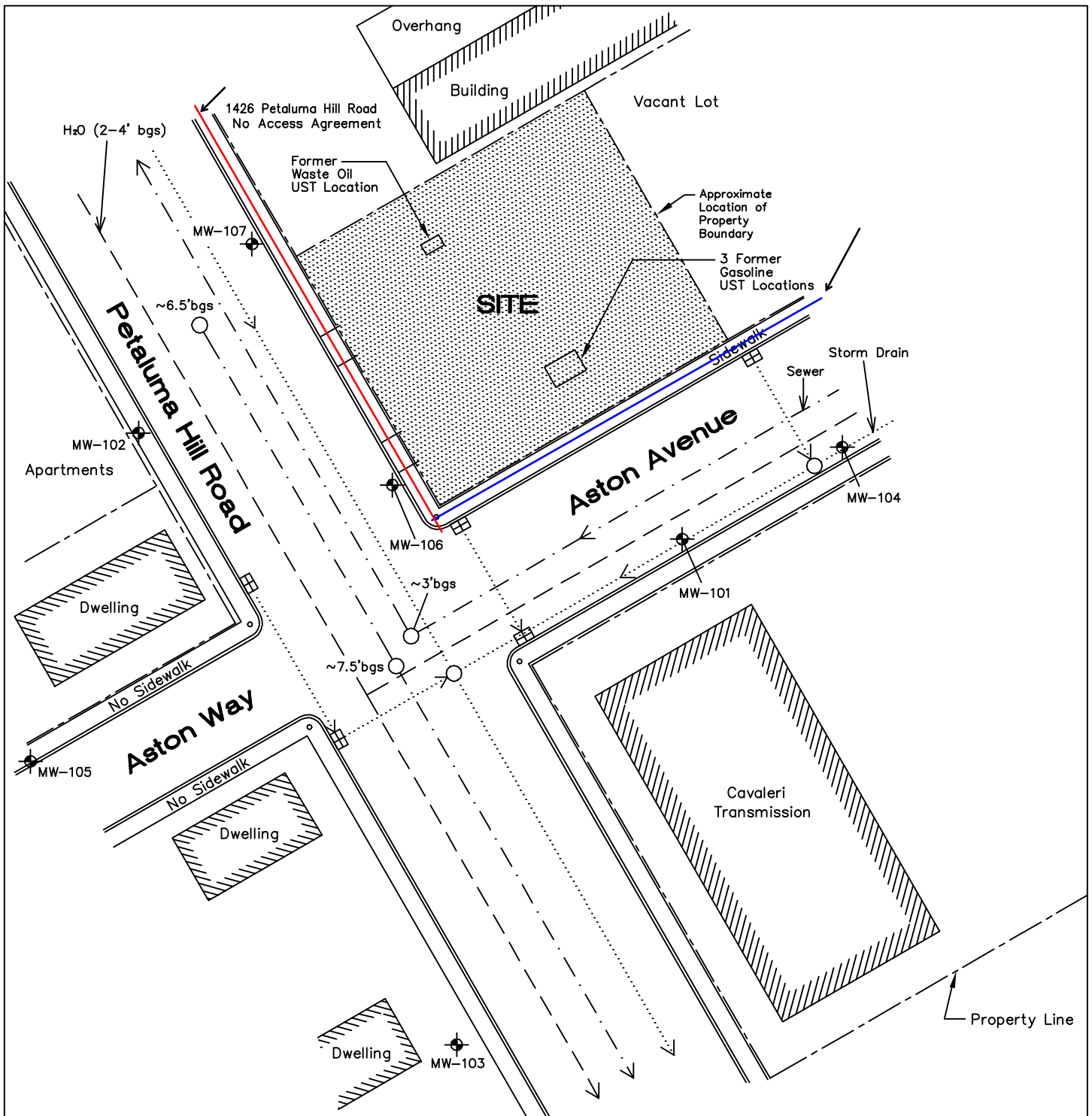
SCALE:
1" = 50'

FIGURE NO.
2



SCS ENGINEERS		
ENVIRONMENTAL CONSULTANTS		
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA PH. (707) 546-9461 FAX. (707) 544-5769		
PROJ. NO. 1203307.00	DWN. BY: JUM/AJH	ACAD FILE: 3307.00_SP_STEP_11-05
DATE 11/02/05	CHK. BY: KWF	APP. BY: KWF

SHEET TITLE SITE PLAN WITH PROPOSED MONITORING WELL AND STEP OUT BORING LOCATIONS	SCALE: 1" = 50'
PROJECT TITLE G. K. HARDT DEVELOPMENT CO. 1452 PETALUMA HILL ROAD SANTA ROSA, CALIFORNIA	
FIGURE NO. 3	



LEGEND

--- Water Main
 --- Sanitary Sewer
 Storm Drain

○ Manhole Cover
 □ Catch Basin

⊕ Monitoring Well Location

0 25' 50'
 Bar Scale ±



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3645 WESTWIND BOULEVARD
 SANTA ROSA, CA 95403
 Ph. (707) 546-9461
 Fax (707) 544-5769

SITE PLAN

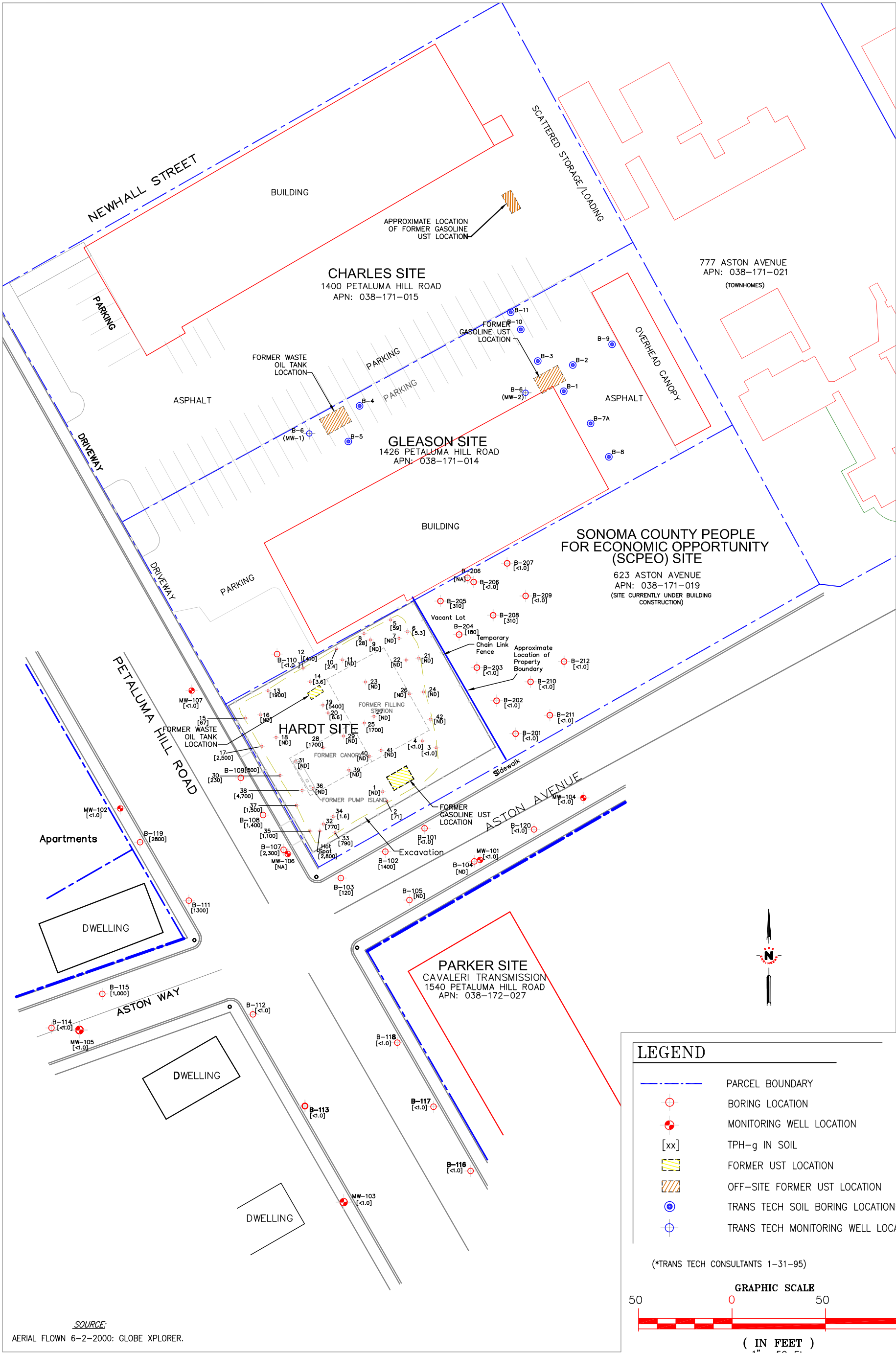
With Utility Trenches
 G. K. Hardt Development Co.
 1452 Petaluma Hill Road
 Santa Rosa, California

PLATE

2

DRAWN BY: ALP	DWG NAME: 41091-UM	APPROVED BY: GSJ	JOB NUMBER: 4109.1	W.O. NUMBER: 2924	REVISIONS:
------------------	-----------------------	---------------------	-----------------------	----------------------	------------

DATE:
 7/13/03



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SANTA ROSA, CALIFORNIA
PH. (707) 546-9461 FAX. (707) 544-5769

PROJ. NO.
1203307.00

DATE
10/4/05

DWN. BY:
JJM/AJH

CHK. BY:
KWF

ACAD FILE:
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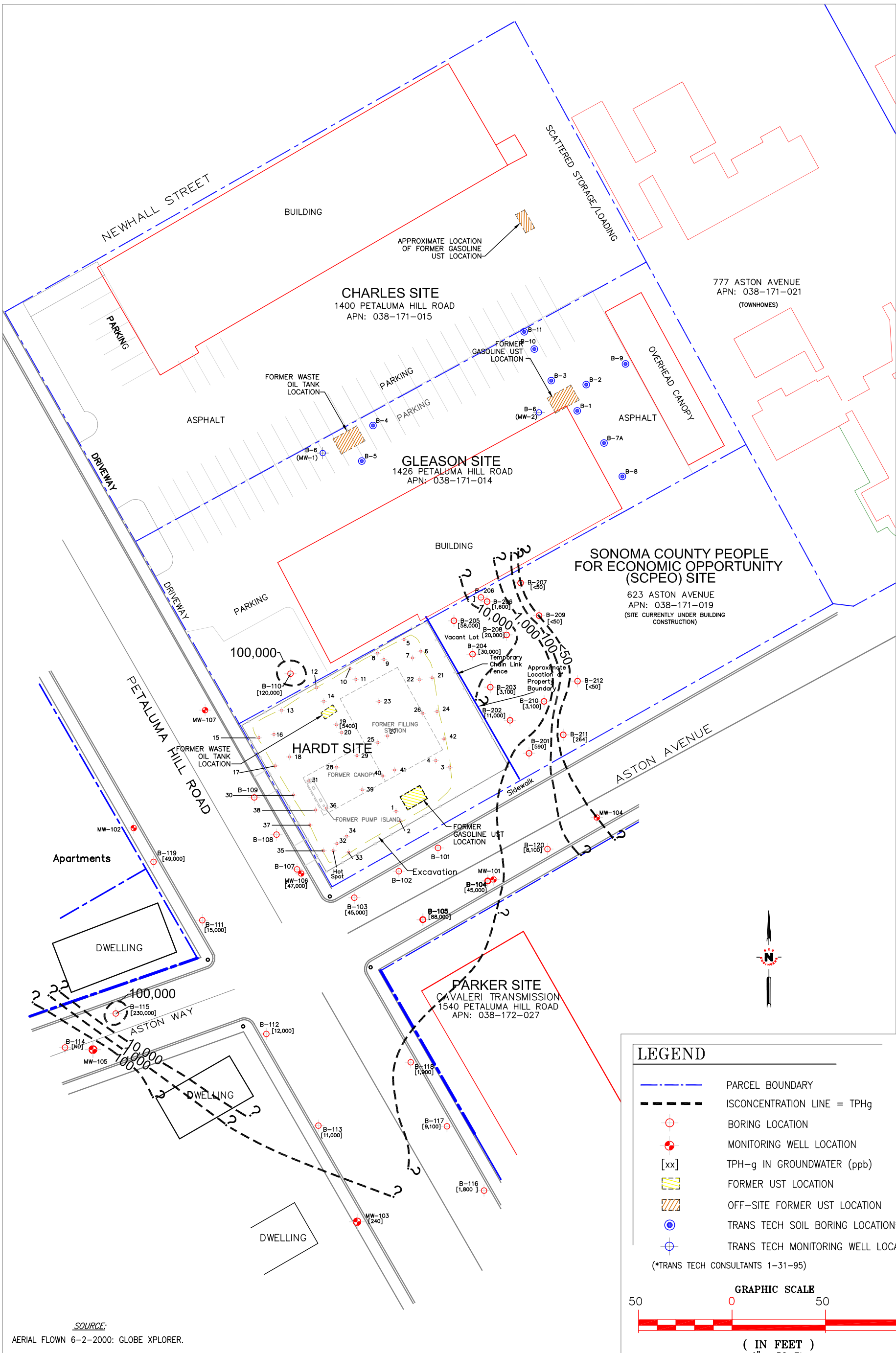
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KWF

SHEET TITLE
SITE PLAN: RESIDUAL TPH-g IN SOIL

PROJECT TITLE
G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

SCALE:
1" = 50'

FIGURE NO.
5



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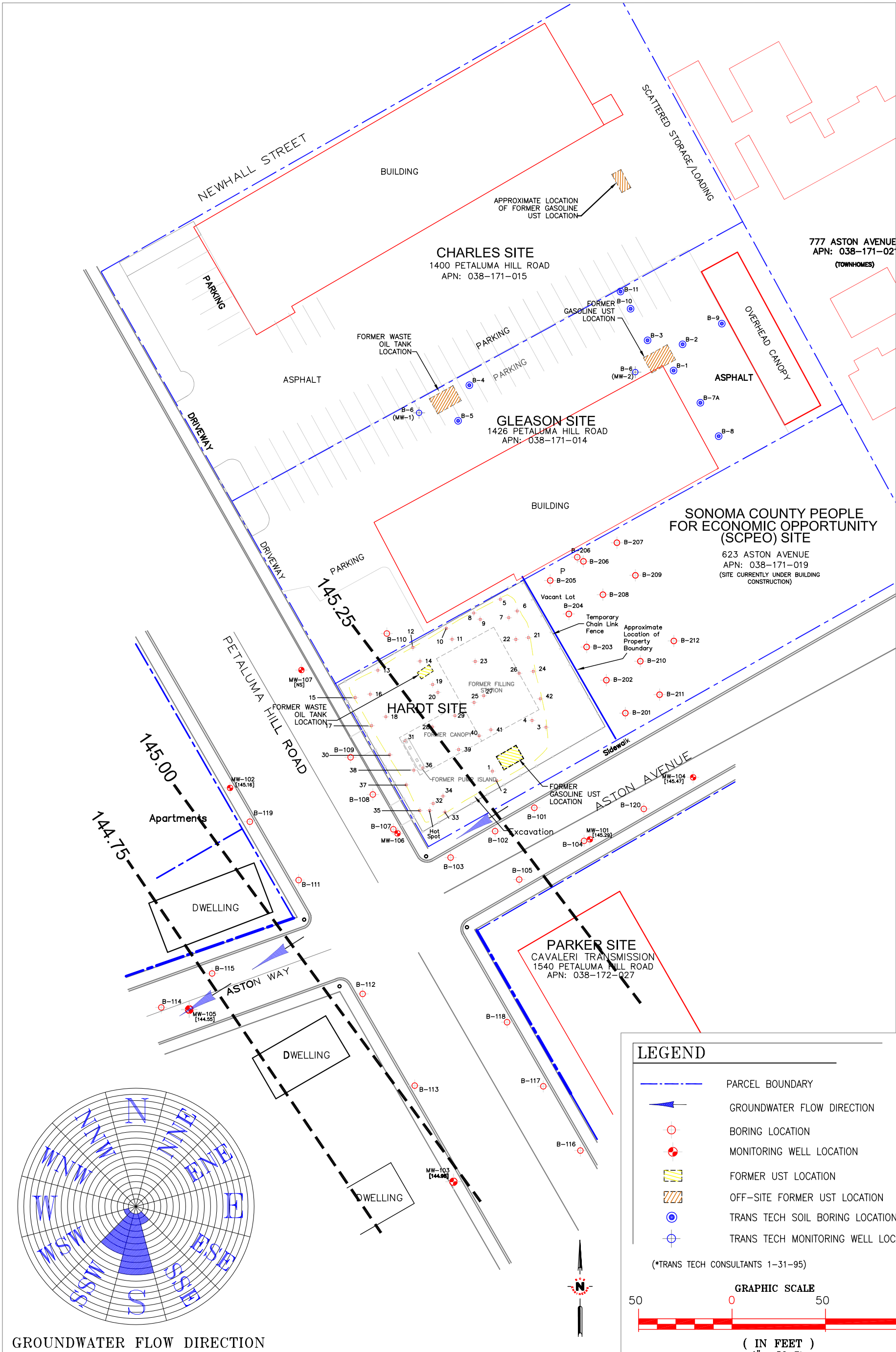
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DATE	10/4/05	CHK. BY:	KWF	APP. BY:	KWF

SHEET TITLE
SITE PLAN: TPH-g IN GROUNDWATER HISTORIC BORINGS

PROJECT TITLE
G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

SCALE:
1" = 50'

FIGURE NO.
6



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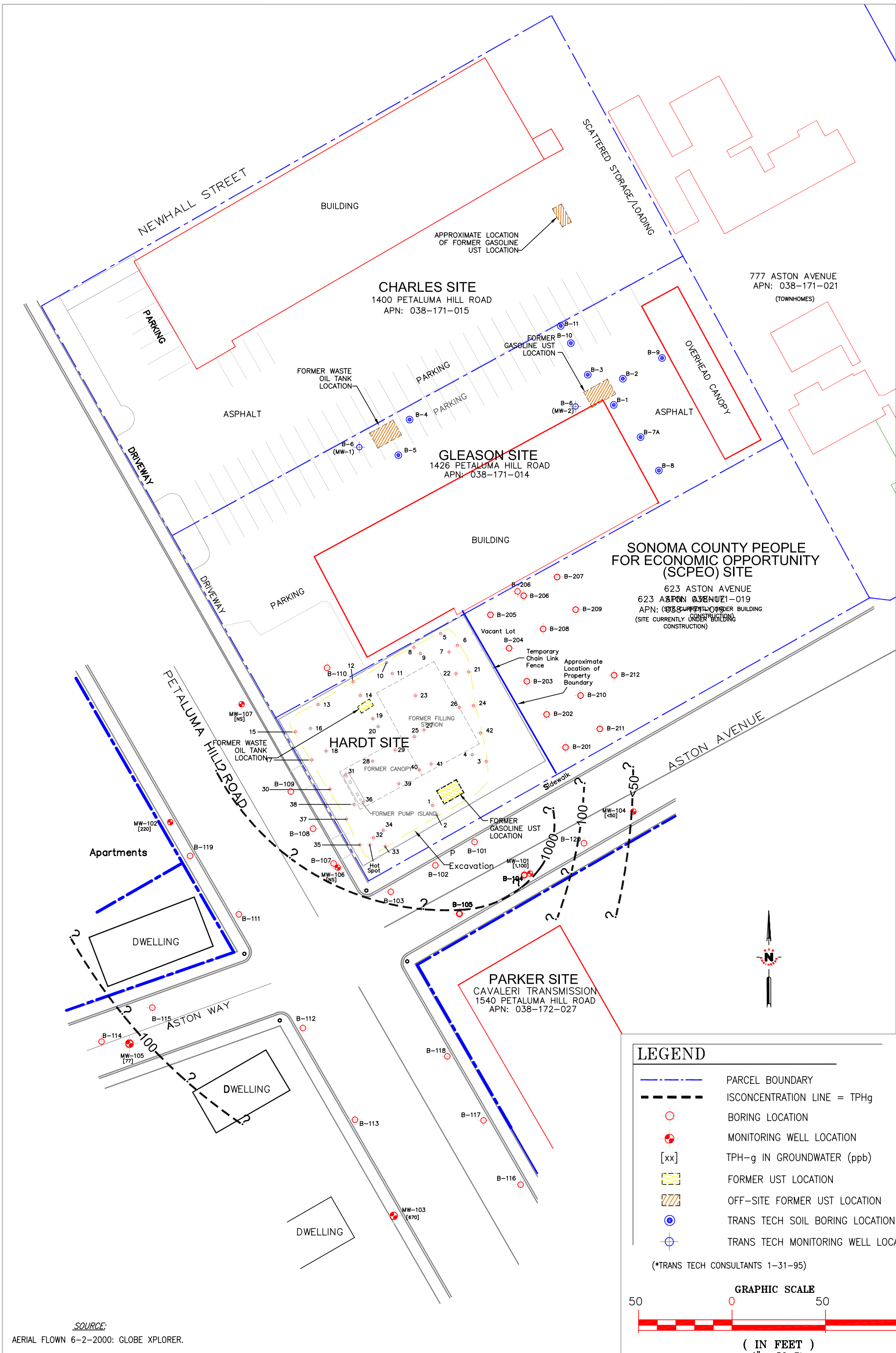
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DATE	10/4/05	CHK. BY:	KWF	APP. BY:	KWF

SHEET TITLE
SITE PLAN: GROUNDWATER FLOW DIRECTION AND GRADIENT: 8/09/05

PROJECT TITLE
G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

SCALE:
1" = 50'

FIGURE NO.
8



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3645 WESTWIND BOULEVARD
SANTA ROSA, CALIFORNIA
PH. (707) 546-9461 FAX. (707) 544-5769

PROJ. NO. 1203307.00

DATE 9/7/05

DWN. BY: JJM/AJH

CHK. BY: KWF

ACAD FILE: 3307.00_SP_X_9-05

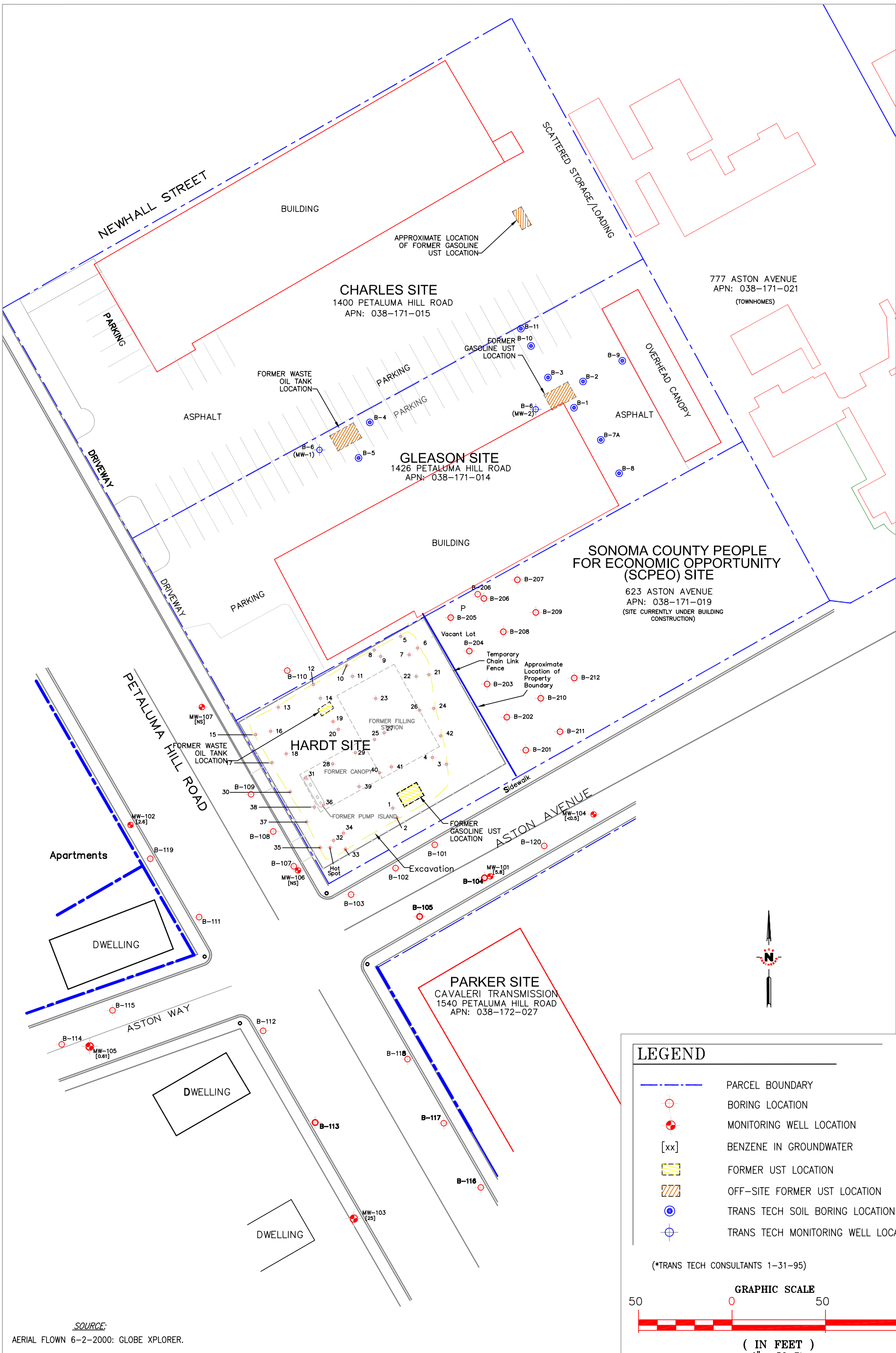
APP. BY: KWF

SHEET TITLE
ISOCONCENTRATION MAP: TPH-g IN GROUNDWATER: 08/09/05

PROJECT TITLE
G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

SCALE:
1" = 50'

FIGURE NO.
9



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3645 WESTWIND BOULEVARD
SANTA ROSA, CALIFORNIA
PH. (707) 546-9461 FAX. (707) 544-5769

PROJ. NO. 1203307.00	DWN. BY: JJM/AJH	ACAD FILE: 3307.00_SP_GHB_10-05
DATE 10/4/05	CHK. BY: KWF	APP. BY: KWF

SHEET TITLE
ISOCONCENTRATION MAP: BENZENE IN GROUNDWATER: 08/09/05

PROJECT TITLE
G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

SCALE:
1" = 50'

FIGURE NO.
10



SCS ENGINEERS

3645 WESTWIND BOULEVARD
SANTA ROSA, CA 95403
PH. (707) 546-9461 FAX (707) 544-5769

PROJ. NO: 01203307.00

TAKEN BY:

FILE: _SiteVicMap

DATE: 10/5/05

CREATED BY
MRO/JJM

APP. BY: KWF

SITE VICINITY MAP WITH DOMESTIC WELL LOCATIONS

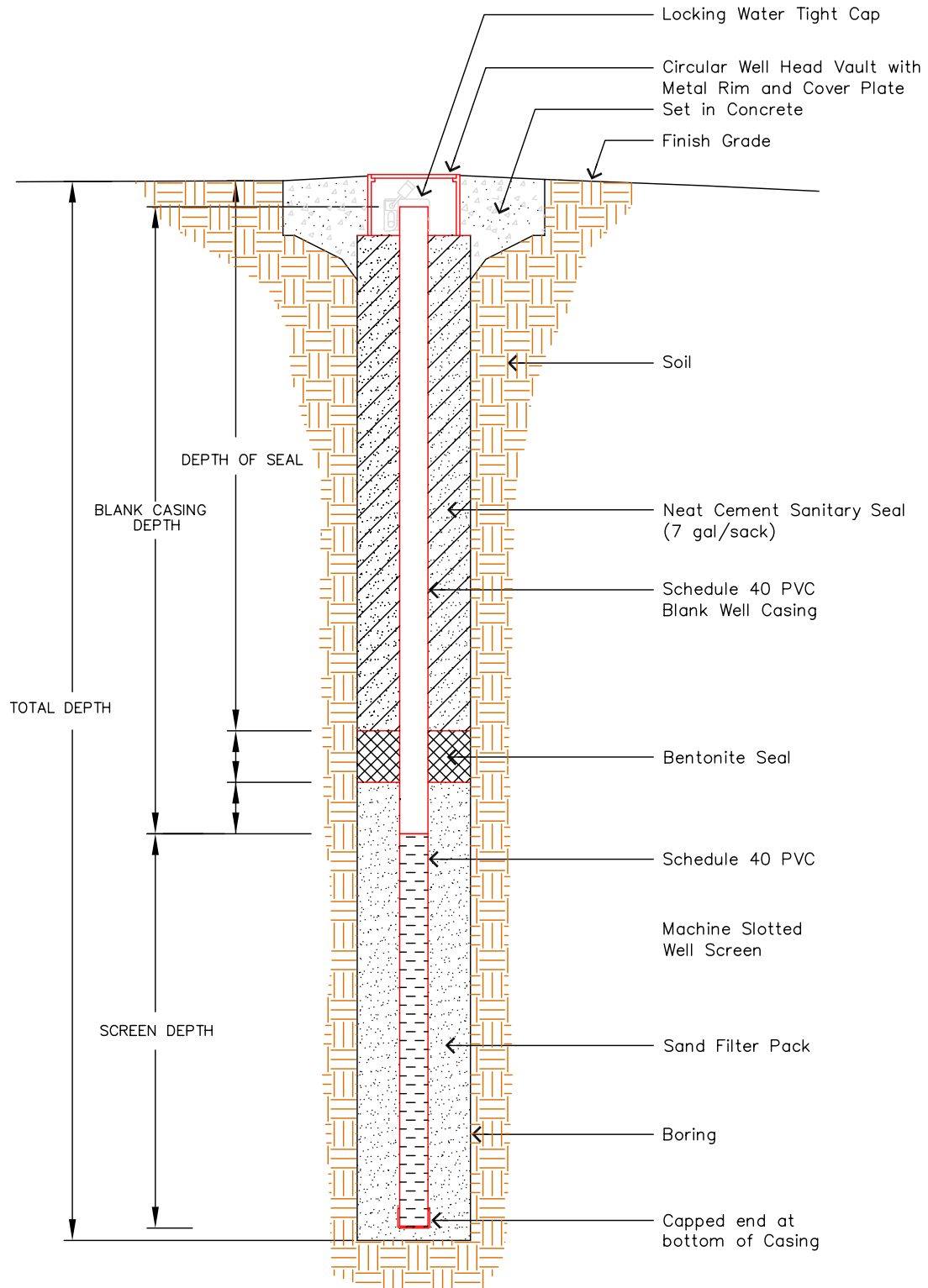
G. K. HARDT DEVELOPMENT INC.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

APPROX. SCALE

(SEE ABOVE)

FIGURE:

11



SCS ENGINEERS

ENVIRONMENTAL CONSULTANTS

3645 WESTWIND BOULEVARD
SANTA ROSA, CALIFORNIA 94503
PH. (707) 946-5461 FAX. (707) 544-5769

PROJ. NO. 1203307.00	DWN. BY: JJM/AJH	ACAD FILE: 3307.00_WD_10_05
DATE 10/06/05	CHK. BY: KWF	APP. BY: KWF

SHEET TITLE:

WELL COMPLETION DIAGRAM (TYPICAL)

PROJECT TITLE:

G. K. HARDT DEVELOPMENT CO.
1452 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

SCALE:

NOT TO SCALE

FIGURE NO.

12

Appendices

Appendix A: Sanborn Maps, Background Documentation



"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Jonathan J. Meronek
SCS Engineers
3645 Westwind Boulevard
Santa Rosa, CA 95403

Order Date: 9/22/2005 **Completion Date:** 9/23/2005

Inquiry #: 1516877.1S

P.O. #: NA

Site Name: G. K. Hardt

Address: 1452 Petaluma Hill Road

City/State: Santa Rosa, CA 95404

Cross Streets:

Customer Project: 01203307.00
1261389VLA 707-546-9461

Based on client-supplied information, fire insurance maps for the following years were identified

1950 - 1 Map

1969 - 1 Map

Limited Permission to Photocopy

Total Maps: 2

SCS Engineers (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

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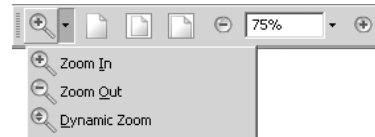
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This User's Guide provides guidelines for accessing Sanborn Map® images and for transferring them to your Word Processor.

- Sanborn Maps document historical property use by displaying property information through words, abbreviations, and map symbols. The Sanborn Map Key provides information to help interpret the symbols and abbreviations used on Sanborn Maps. The Key is available from EDR's Web Site at: <http://www.edrnet.com/reports/samples/key.pdf>

- Sanborn Map Report, listing years of coverage
- User's Guide
- Oldest Sanborn Map Image
- Most recent Sanborn Map Image

1. Open file on screen.
2. Identify TP (Target Property) on the most recent map.
3. Find TP on older printed images.
4. Using Acrobat® Reader®, zoom to 250% in order to view more clearly. (200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.)
 - A. On the menu bar, click "View" and then "Zoom to..."
 - B. Or, use the magnifying tool and drag a box around the TP



- EDR recommends printing images at 300 dpi (300 dpi prints faster than 600 dpi)
- To print only the TP area, cut and paste from Acrobat to your word processor application.

1. Go to the menu bar
2. Click the "Select Tool"
3. Draw a box around the area selected
4. "Right click" on your mouse
5. Select "Copy Image to Clipboard"
6. Go to Word Processor such as Microsoft Word, paste and print.



1. Go to the menu bar
2. Click the "Graphics Select Tool"
3. Draw a box around the area selected
4. Go to "Menu"
5. Highlight "Edit"
6. Highlight "Copy"
7. Go to Word Processor such as Microsoft Word, paste and print.



- Images are grouped into one file, up to 2MB.
- In cases where in excess of 6-7 map years are available, the file size typically exceeds 2MB. In these cases, you will receive multiple files, labeled as "1 of 3", "2 of 3", etc. including all available map years.
- Due to file size limitations, certain ISPs, including AOL, may occasionally delay or decline to deliver files. Please contact your ISP to identify their specific file size limitations.



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Year: 1907
SES: EDR Research Associate

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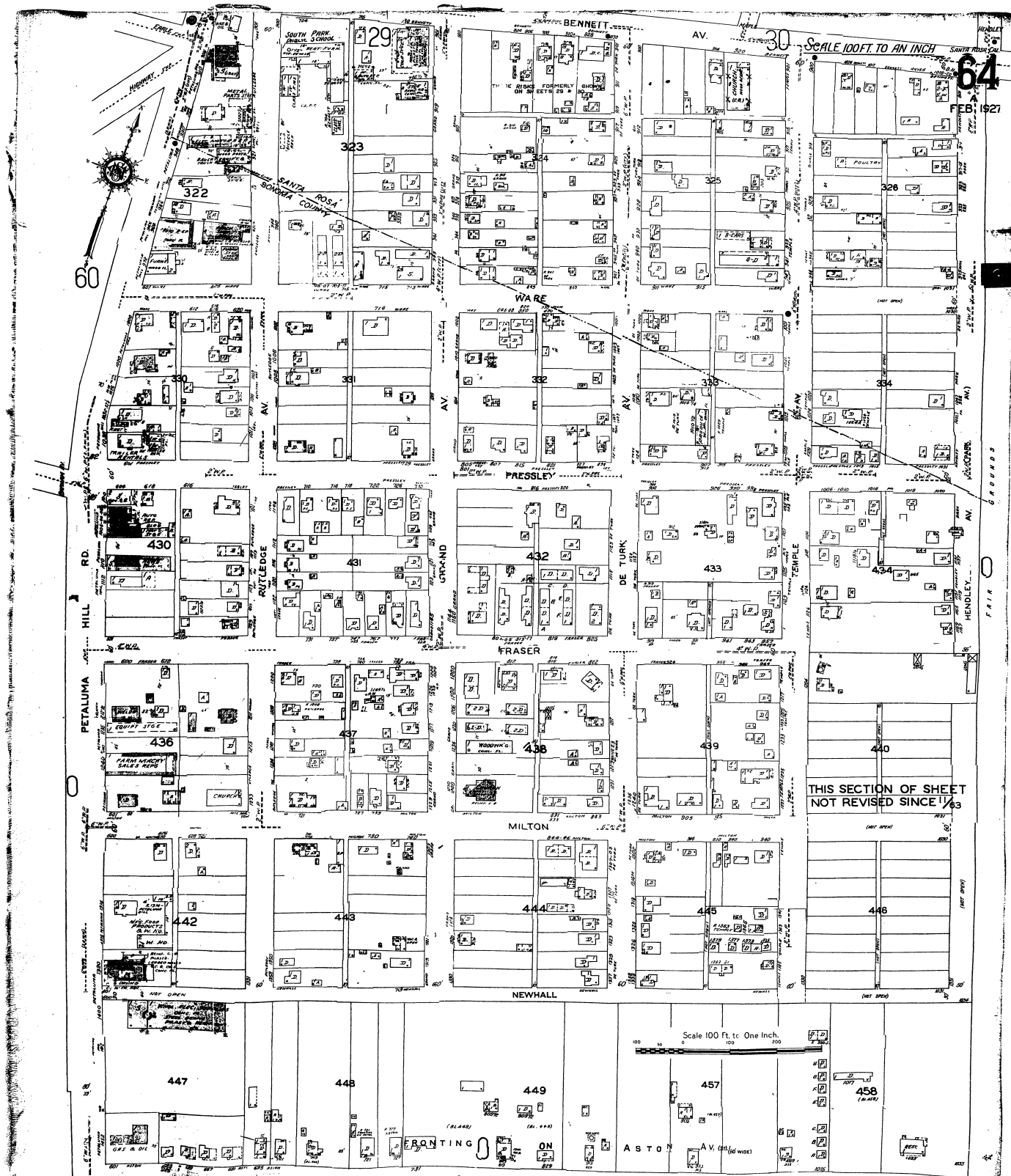




The Sanborn Library, LLC

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Year EDR Research Associate

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION**

5550 SKYLANE BLVD, SUITE A
SANTA ROSA, CA 95403
PHONE: (707) 576-2220



January 10, 1996

Mr. Leland Gleason
6332 Stone Bridge Road
Santa Rosa, CA 95409

Dear Mr. Gleason:

Subject: Bay Bridge Garage, 1426 Petaluma Hill Road, Santa Rosa
Case No. 1TSR054

This letter serves as a written response to our December 19, 1995 meeting and January 5, 1996 phone conversation. Based on our discussion, your request for case closure and staff evaluation of site conditions, it appears that no further work is required at the subject site.

A case closure letter will be issued upon completion of monitoring well abandonment and proper disposal of any drummed soil and/or purge water at the site.

You may contract directly with a licensed drilling firm for well abandonment. You do not need the services of a professional engineer or registered geologist. Please contact John Anderson with Sonoma County Environmental Health Services at (707) 525-6571 concerning well abandonment permit requirements and procedures.

If you have questions or require assistance please call me at (707) 576-2675.

Sincerely,

A handwritten signature in cursive script, appearing to read "Joan Fleck", is written below the "Sincerely," line.

Joan Fleck
Associate Engineering Geologist

JEF:tab\leland

cc: Santa Rosa Fire Department

John Anderson, Sonoma County Environmental Health Services

Trans Tech Consultants, 3100 Dutton Avenue, Suite 110, Santa Rosa, CA 95407



FILE COPY

June 3, 1993

Robert E. Berner
4711 Muirfield Court
Santa Rosa, CA 95405

UNDERGROUND TANK LISTING - 1400 PETALUMA HILL ROAD

The Santa Rosa Fire Department is currently reconciling our underground storage tank records. A report forwarded to us by the State of California, Water Resources Control Board indicates that they have the following underground tank(s) listed at your property.

One (1) 2000 gallon, regular unleaded fuel tank registered to Raban Supply.

The purpose of this letter is to collect any information you may have on the status of this tank. **Please advise me if the above information is correct.** If the tank has been removed, please provide me with any dates, contractor, permits, photographs or other supporting documentation. It is important to update the State records if the tank has been removed so that you can avoid future billing for underground tank fees.

Please respond not later than June 14, 1993. If you should have any questions, please contact me at (707) 524-5039, weekdays between 8-9 a.m. or 4-5 p.m.

Mark Pedroia

MARK L. PEDROIA
Fire Inspector

E11:1400PETA.L10



SANTA ROSA FIRE DEPARTMENT
FIRE PREVENTION BUREAU
955 SONOMA AVENUE
SANTA ROSA, CA 95404
707-576-5311

PERMIT NO.

2688TR

HAZARDOUS MATERIALS PERMIT

ADDRESS	P.O. Box 6021 Santa Rosa 1900 Petaluma Hill Rd	STREET	ZIP	95403
BUSINESS NAME	M.R.L. Underground Tank Testing, Inc.		PHONE	707 575 9018
BUSINESS LICENSE NO.	12143			
APPLICANT	M.R.L. Underground Tank Testing, Inc.		PHONE	707 575 9018
ADDRESS	P.O. Box 6021 Santa Rosa			
CITY	Santa Rosa	STATE	CA	ZIP 95406
PROPERTY OWNER	Del Monte, Haaly, Fund I		PHONE	
ADDRESS	650 Cordelia Hwy Ave #1			
CITY	Santa Rosa, CA, CA	STATE		ZIP 95405
PARCEL NO.	AP# 38-171-15			

PERMITS FOR:

OPERATIONAL

- | | |
|---|---|
| <input type="checkbox"/> MINIMAL STORAGE | <input type="checkbox"/> STANDARD STORAGE |
| <input type="checkbox"/> EXTENDED STORAGE | <input type="checkbox"/> WITH UNDERGROUND TANKS |

CLOSURE

- | | |
|--|--|
| <input type="checkbox"/> ABOVEGROUND STORAGE | <input checked="" type="checkbox"/> UNDERGROUND TANK REMOVAL |
|--|--|

CONDITIONAL

- | | |
|--|---|
| <input type="checkbox"/> TEMPORARY STORAGE | <input type="checkbox"/> REPAIR OR MODIFICATION |
| <input type="checkbox"/> PROVISIONAL | <input type="checkbox"/> INSTALLATION |

CONDITIONS & LIMITATIONS:

FEES:

PLAN CHECK
REINSPECTION
OPERATIONAL (STORAGE)
STATE SURCHARGE
OWNERSHIP TRANSFER
TOTAL

CONSENT: Any application for, or acceptance of, any permit requested or issued pursuant to Santa Rosa City Ordinance No. 2451, constitutes agreement and consent by the person making the application or accepting the permit to allow Fire Department Personnel to enter these premises at any reasonable time to conduct such inspections as are required.

SUSPENSION: Whenever it is determined that the public's health or safety is threatened by facilities permitted by this agency, such permit may be suspended.

APPLICANT Mark Reno DATE Aug 3, 87

OFFICE USE

PERMIT REVIEWED BY: ff ISSUE DATE: 9-1-87 EXPIRATION DATE:



SANTA ROSA FIRE DEPARTMENT
FIRE PREVENTION BUREAU
955 SONOMA AVENUE
SANTA ROSA, CALIFORNIA 95404
TELEPHONE (707) 576-5311
TANK REMOVAL APPLICATION

OFFICE USE
No.: <u>2688TR</u>
Date: _____

FACILITY NAME Del Monte Hanly Farm I

Temporary Closure? () Yes () No Anticipated Length of Closure _____

Permanent Closure? (X) Yes () No Date Tank will be Closed Aug 7, 87

Tank Size 2000 gal Age of Tank 10 years

Tank Contents: Product/Chemical Name Unleaded regular

CAS # (if known) _____

Reason for Tank Closure Tank use no longer needed. property being sold

Removed Product/Chemical Destination or Disposal Location:

Name of Facility Tank is empty

Address _____

Phone _____

Method of Hauling Product/Chemical _____

Hauler Licensed by EPA? (X) Yes () No

EPA License Number CAD 004771168

Hauler's Name H+H

Address P.O. Box 77363 San Francisco, CA 94107

Phone (415) 543 4835

If tank is being permanently closed, complete the following:

Has tank leaked? () Yes () No (X) Unknown

Has soil sampling for product contamination been done? () Yes (X) No () Unknown

Analytical Laboratory used for Analysis:

Name of Laboratory ANALTEC

Address _____

Phone _____

(Provide copy of test for product contamination of soil)



SANTA ROSA FIRE DEPARTMENT
955 SONOMA AVENUE
SANTA ROSA, CALIFORNIA 95404
TELEPHONE (707) 576-5311

OFFICE USE	
Number:	2688TR
Date:	

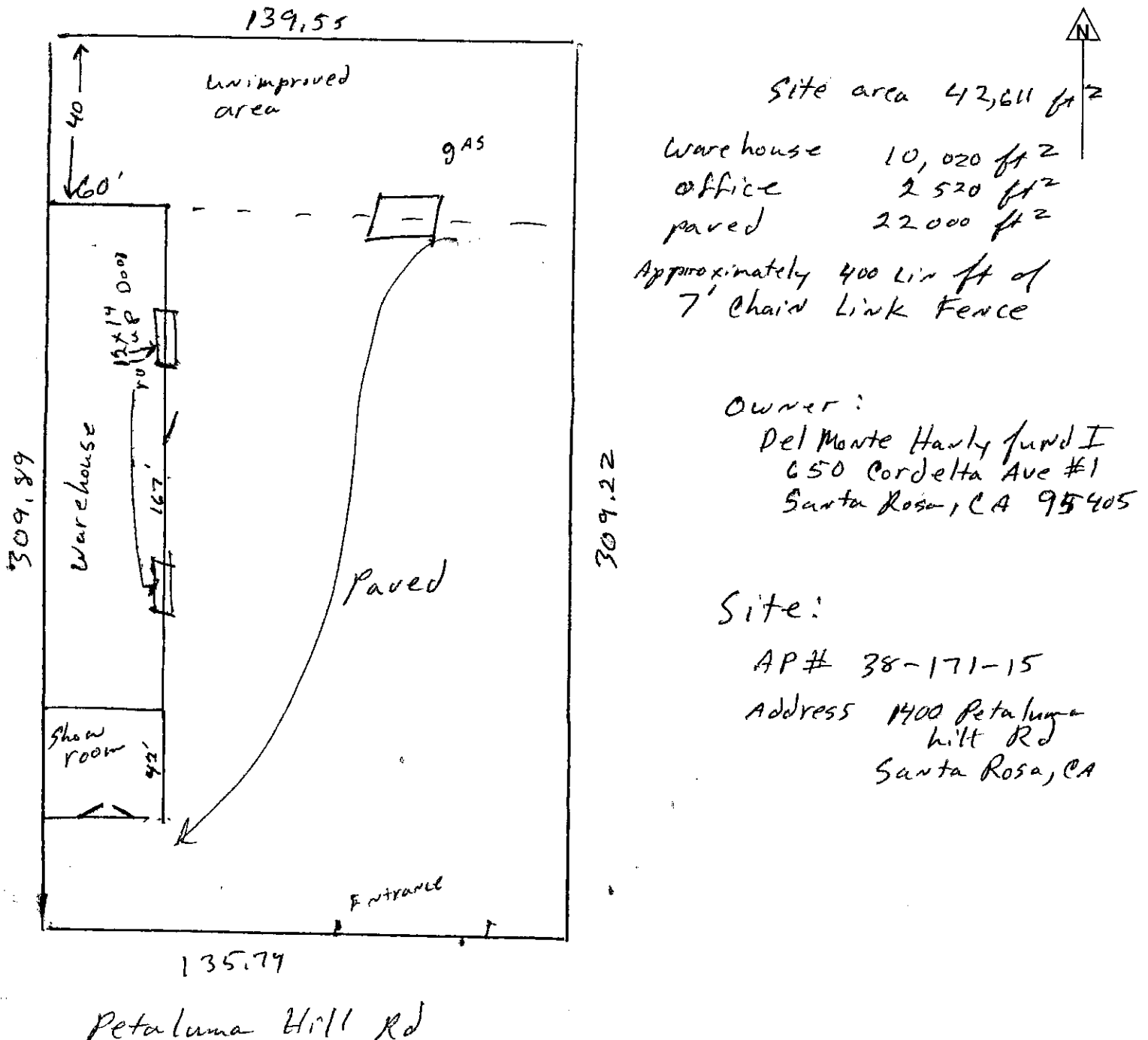
FACILITY ADDRESS: 1400 Petaluma Hill Rd Santa Rosa, CA

FACILITY NAME: currently a vacant building subject to sale

SITE PLAN

1. Indicate proximity of site, including street by name and location, property boundary information and adjoining land uses.
2. Indicate all building entries and exits clearly.
3. Indicate location of all utilities, creeks, wells, etc.
4. Locate precisely all exterior hazardous materials storage sites, including underground tank installations.
5. Provide general building construction information, including all emergency protection system details. Examples: valves, shutoff switches, berms, dikes, drains.

Name of Person Completing Form: Mark Reano





ANATEC
LABORATORIES
INC.

RECEIVED

AUG 31 1987

SANTA ROSA FIRE DEPT.

435 Tesconi Circle

Santa Rosa, California 95401

707-526-7200

Mark Reano
MRL Underground Tank Testing
PO Box 6021
Santa Rosa, CA 95406

August 25, 1987
ANATEC Log No: 9945 (1-2)
Series No: 429/001
Client Ref: Del Monte/Hanly
MRL Permit #
2688TR (80.118)

Subject: Analysis of Two Samples Identified as "Del Monte/
Hanly Fund I" Received

Dear Mr. Reano:

Analysis of the samples referenced above has been completed. This report is written to confirm results transmitted verbally on August 24, 1987.

On receipt at the laboratory, sample custody was transferred to ANATEC sample control personnel who subsequently documented receipt and condition of the samples and placed them in secured storage at 4°C until analysis commenced.

In preparation for volatile hydrocarbons measurements, aliquots of samples were taken from core centers with stainless steel implements, immediately weighed, and sealed in septum-capped vials. Additionally, vials were prepared in essentially the same fashion to represent method blanks, commercial gasoline standards, gasoline-fortified sample spikes and sample replicates. Each vial was heated for a period of one hour at 90°C during which time light hydrocarbons (such as gasoline) were expected to equilibrate in distribution between sample and headspace. Headspace gases were subsequently analyzed by gas chromatography to measure total light hydrocarbons. Response of the chromatographic system to samples was compared with response to standards prepared with commercial gasoline for purposes of qualitative and quantitative interpretation.

Details of the analytical methodology are consistent with requirements specified in "Guidelines for Addressing Fuel Leaks," Regional Water Quality Control Board, San Francisco Bay Region, revised 1986; the preparation procedures used are described in detail in "Headspace Method," Method 5020, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA, SW-846, 2nd edition, revised 1984.



ANATEC

429/001 LOG 9945

- 2 -

August 25, 1987

Results of analyses are summarized in Table 1. Attached are the sample custody document and site diagram. Please feel welcome to contact us should you have questions regarding procedures or results.

Submitted by:

Approved by:

Margo Porter / for
Kim L. Hansard
Project Chemist

Greg Anderson
Greg Anderson, Director
Analytical Laboratories

Enc: Custody Document
Site Diagram

cc: Mr. Jerry Faddis
Fire Inspector
Santa Rosa Fire Department
955 Sonoma Avenue
Santa Rosa, CA 95404



TABLE 1. SUMMARIZED ANALYTICAL RESULTS

Lab No.	Descriptor	Volatile Petroleum Hydrocarbons, as Gasoline (mg/Kg) ¹
9945-1	#1 8/7/87 1132 South End of Excavation Fill End of Tank 9'6" Below Grade	<2
9945-2	#2 8/7/87 1132 North End of Excavation Fill End of Tank 10'3" Below Grade	<2

¹mg/Kg--Data are expressed as milligrams analyte per kilogram sample,
as-received basis.



CHAIN OF CUSTODY RECORD

[illegible]

139.55



SCALE: 1" = 4'

SITE AREA: 42,611 SQ. FT.

WARE HOUSE AREA: 10,020 SQ. FT.

OFFICE AREA: 2,520 " "

PAVED AREA 22,000 " "

APPROX 400 LIN. FT. OF 7' CHAIN LINK FENCE.

21 EXISTING PARKING SPACES

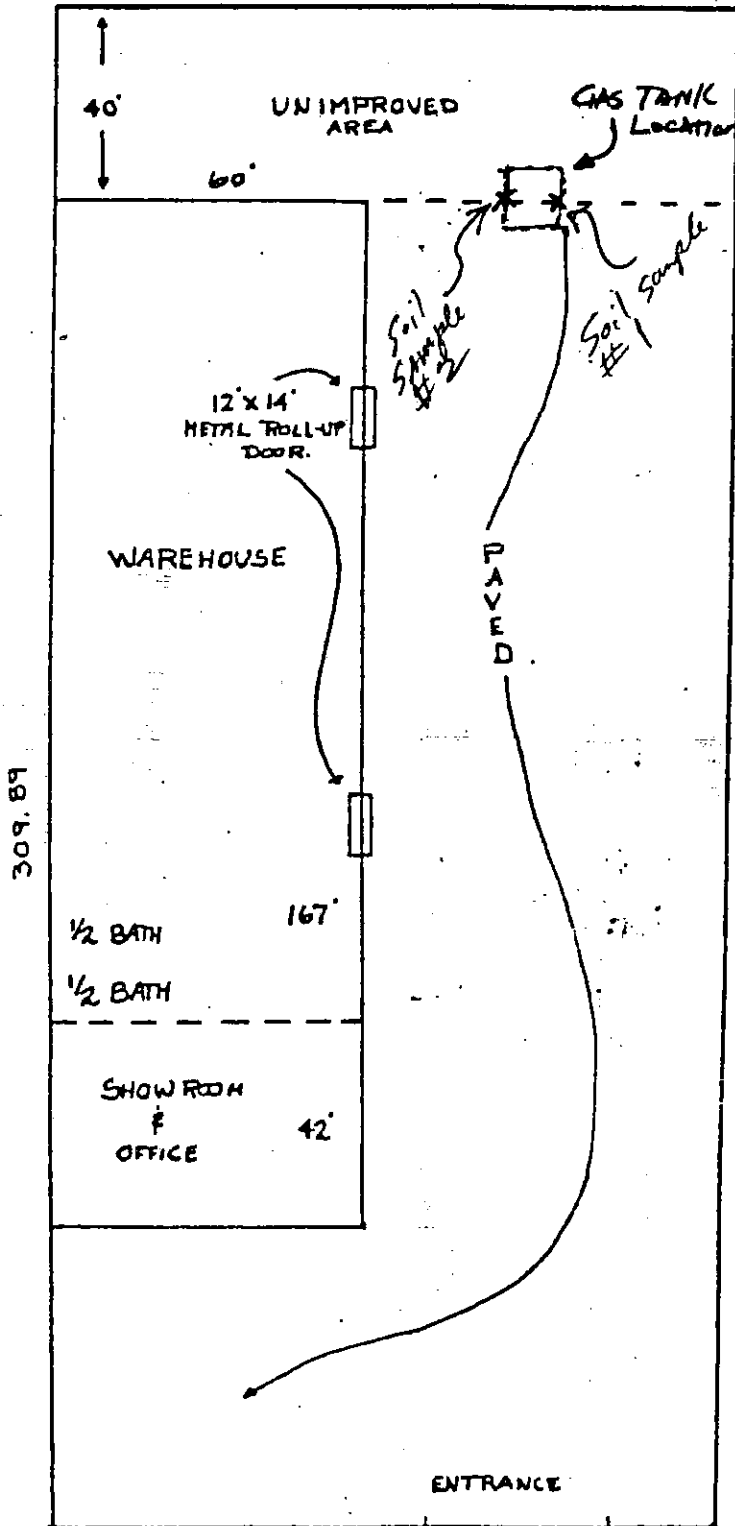
578 2308/525 0571

OWNER: DEL MONTE, HANLY FUND

650 Cordelia Ave #41
Santa Rosa, CA 95405

AP# 38-171-15

9945



135.74

1400
PETALUMA HILL RD



SANTA ROSA FIRE DEPARTMENT
FIRE PREVENTION BUREAU
955 SONOMA AVENUE
SANTA ROSA, CA 95404
707-576-5311

PERMIT NO.

2688TR

HAZARDOUS MATERIALS PERMIT

ADDRESS	P.O. Box 6021 Santa Rosa	STREET	1900 Petaluma Hill Rd	ZIP	95402
BUSINESS NAME	M.R.L. Underground Tank Testing, Inc.			PHONE	707 575 9018
BUSINESS LICENSE NO.	12143				
APPLICANT	M.R.L. Underground Tank Testing, Inc.			PHONE	707 575 9018
ADDRESS	P.O. Box 6021 Santa Rosa				
CITY	Santa Rosa	STATE	CA	ZIP	95401
PROPERTY OWNER	Del Monte, Hanly, Fund I			PHONE	
ADDRESS	650 Cordelia Hwy Ave #1				
CITY	Santa Rosa, CA, CA	STATE		ZIP	95405
PARCEL NO.	AP# 38-171-15				

PERMITS FOR:

OPERATIONAL

- | | |
|---|---|
| <input type="checkbox"/> MINIMAL STORAGE | <input type="checkbox"/> STANDARD STORAGE |
| <input type="checkbox"/> EXTENDED STORAGE | <input type="checkbox"/> WITH UNDERGROUND TANKS |

CLOSURE

- | | |
|--|--|
| <input type="checkbox"/> ABOVEGROUND STORAGE | <input checked="" type="checkbox"/> UNDERGROUND TANK REMOVAL |
|--|--|

CONDITIONAL

- | | |
|--|---|
| <input type="checkbox"/> TEMPORARY STORAGE | <input type="checkbox"/> REPAIR OR MODIFICATION |
| <input type="checkbox"/> PROVISIONAL | <input type="checkbox"/> INSTALLATION |

CONDITIONS & LIMITATIONS:

FEES:

PLAN CHECK _____
REINSPECTION _____
OPERATIONAL (STORAGE) _____
STATE SURCHARGE _____
OWNERSHIP TRANSFER _____
TOTAL _____

CONSENT: Any application for, or acceptance of, any permit requested or issued pursuant to Santa Rosa City Ordinance No. 2451, constitutes agreement and consent by the person making the application or accepting the permit to allow Fire Department Personnel to enter these premises at any reasonable time to conduct such inspections as are required.

SUSPENSION: Whenever it is determined that the public's health or safety is threatened by facilities permitted by this agency, such permit may be suspended.

APPLICANT Mark Ream

DATE Aug 3, 87

OFFICE USE

PERMIT REVIEWED BY: AF

ISSUE DATE: 9-1-87

EXPIRATION DATE: _____



SANTA ROSA FIRE DEPARTMENT
FIRE PREVENTION BUREAU
955 SONOMA AVENUE
SANTA ROSA, CALIFORNIA 95404
TELEPHONE (707) 576-5311

TANK REMOVAL APPLICATION

OFFICE USE

No.:

2688TR

Date:

FACILITY NAME Del Monte Hanky Fund I

Temporary Closure? () Yes () No Anticipated Length of Closure _____

Permanent Closure? (X) Yes () No Date Tank will be Closed Aug 7, 87

Tank Size 2000 gal Age of Tank 10 years

Tank Contents: Product/Chemical Name Unleaded regular

CAS # (if known) _____

Reason for Tank Closure Tank use no longer needed property being sold

Removed Product/Chemical Destination or Disposal Location:

Name of Facility Tank is empty

Address _____

Phone _____

Method of Hauling Product/Chemical _____

Hauler Licensed by EPA? (X) Yes () No

EPA License Number CAD 004771168

Hauler's Name H & H

Address P.O. Box 77363 San Francisco, CA 94107

Phone (415) 543 4835

If tank is being permanently closed, complete the following:

Has tank leaked? () Yes () No (X) Unknown

Has soil sampling for product contamination been done? () Yes (X) No () Unknown

Analytical Laboratory used for Analysis:

Name of Laboratory ANALTEC

Address _____

Phone _____

(Provide copy of test for product contamination of soil)



NTA ROSA FIRE DEPARTMENT
955 SONOMA AVENUE
SANTA ROSA, CALIFORNIA 95404
TELEPHONE (707) 576-5311

OFFICE USE

Number: 2688TR

Date: _____

FACILITY ADDRESS: 1400 Petaluma Hill Rd Santa Rosa, CA

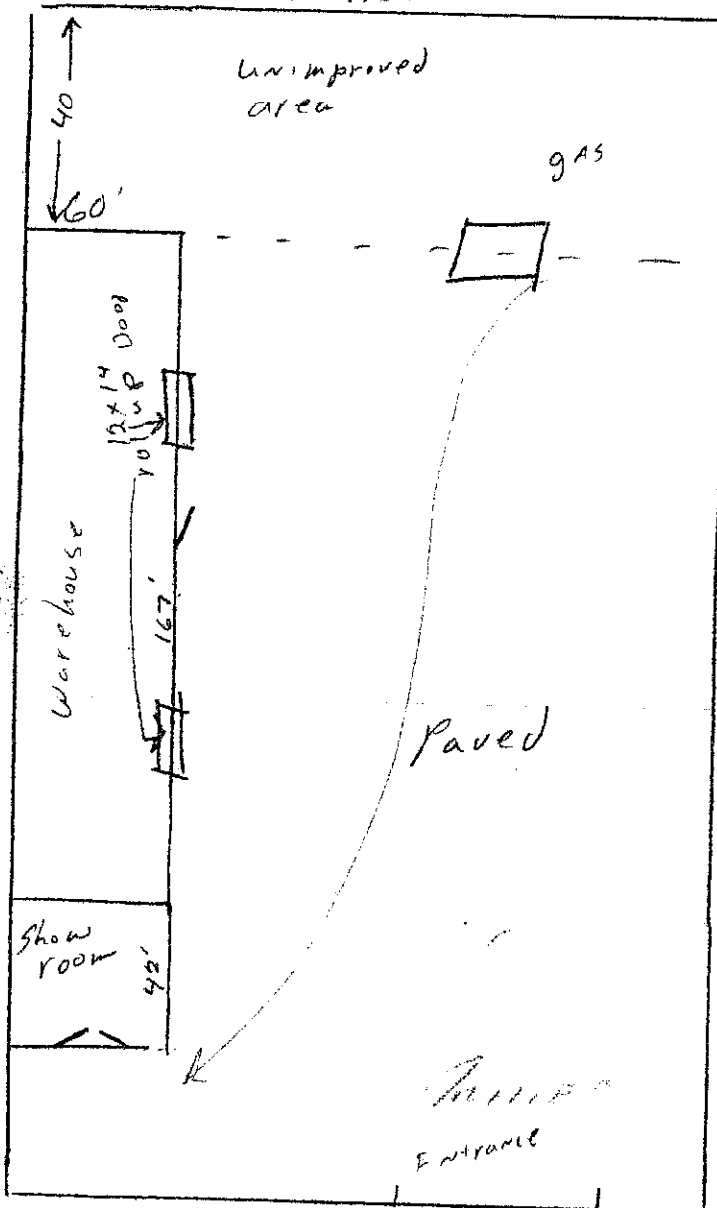
FACILITY NAME: currently a vacant building subject to sale

SITE PLAN

1. Indicate proximity of site, including street by name and location, property boundary information and adjoining land uses.
2. Indicate all building entries and exits clearly.
3. Indicate location of all utilities, creeks, wells, etc.
4. Locate precisely all exterior hazardous materials storage sites, including underground tank installations.
5. Provide general building construction information, including all emergency protection system details. Examples: valves, shutoff switches, berms, dikes, drains.

Name of Person Completing Form: Mark Reano

139.55



Site area 42,611 ft²

Warehouse 10,020 ft²
Office 2,520 ft²
paved 22,000 ft²

Approximately 400 Lin ft of
7' chain link fence

Owner:

Del Monte Hawly fund I
650 Cordelia Ave #1
Santa Rosa, CA 95405

Site:

AP# 38-171-15

Address 1400 Petaluma
Hill Rd
Santa Rosa, CA

Petaluma Hill Rd

8-7-87

LEL - 11

EXCAVATION NOT TO BE
BACKFILLED PRIOR TO
TEST RESULTS.

AREA IS SECURED.

77



RECEIPT

CITY OF SANTA ROSA

DATE 8/4/87

NAME M.R.L. Underground Tanks

ADDRESS Testing
P.O. Box 6021
Santa Rosa, CA

FOR permit # 26887R (80.118)
at 1400 Petaluma Hill Rd.

TOKENS	VALIDATION STAMPS	INVOICE NO.
--------	-------------------	-------------

_____	\$ 150.00
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
REV. ACCT: 0100 - 36115	\$ _____

49985

TOTAL \$ 150.00

Rec'd By Janet Evans



CITY OF SANTA ROSA FIRE DEPARTMENT
215 "A" STREET • SANTA ROSA, CALIFORNIA • (707) 526-5311

APPLICATION

LOCATION 1400 Petaluma Hill rd Santa Rosa
Street Address

APPLICANT Petroleum Eng. 205 1/2 5th Street
Name Address
Santa Rosa CA 95401 545-0560
City, State & Zip Phone

FOR PERMIT TO: Manufacture, store, handle, keep for sale, use, and/or install the following:

3000 gal. steel U.G. tank and pump 6" concrete slab
on 2' x 4' x 16" concrete pad

PROCESS OR OPERATION TO BE CONDUCTED:

H-564384

(Describe briefly what is to be done and state what hazardous materials used)

A permit shall constitute permission to maintain, store, use or handle materials, or to conduct, processes which produce conditions hazardous to life or property, or to install equipment used in connection with such activities.

A permit shall not take the place of any license required by law.

A permit issued under the Fire Code shall continue until revoked or for such a period of time as designated therein at the time of issuance. A permit shall not be transferable and any change in use, occupancy, operation or ownership shall require a new permit.

OWNER OR

AUTHORIZED AGENT x Bob L. Hochstetler Date 5-9-79

**ERMIT SERVICES SECTION
BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET, SAN FRANCISCO, CA 94109
(415) 771-6000**

APPLICATION FOR AUTHORITY TO CONSTRUCT AND PERMIT TO OPERATE:

BUSINESS NAME DOWNEY TIRE CENTER

MAILING ADDRESS 1400 Petaluma Hill Road, Santa Rosa, CA. 95404

EQUIPMENT ADDRESS Same as above

CONTACT NAME Mr. Norman McDonald **PHONE** (707) 545 - 8740

NATURE OF BUSINESS Tire sales and recapping

EQUIPMENT DESCRIPTION Undergroud gasoline storage tank fitted with the Emco Wheaton Balanced Vapor Recovery System using #A-88-001 Coaxial Drop tube and fill cap. Includes the 2" vapor return piping from the tank to the pump. Phase II V.R. nozzle and hose not installed at this time. Delivering Oil Company is presently exempt.

NUMBER OF SOURCES 1 **NEW CONSTRUCTION** ☒ **ALTERATION** ☐

HAS AN ENVIRONMENTAL IMPACT REPORT BEEN PREPARED FOR THIS PROJECT:

YES ☐ **NO** ☒ **IF YES, BY WHOM** N/A

	\$ EST. COST	ESTIMATED DATE	
		START	COMPLETE
BASIC EQUIPMENT	\$2,400.00	Immediate	ASAP
AIR POLLUTION CONTROL EQUIPMENT	\$1,000.00	Immediate	ASAP

SOURCES		EMISSIONS IN GRAMS/SEC					GASOLINE TANKS		
PRODUCT/PROCESS	NO.	PARTIC- ULATES	ORGANICS	SO _x	NO _x	CO	No. of NOZZLES	SIZE* m ³	THRUPOUT m ³ /yr
Unlead Gasoline	1						(1)	7.570	1.892+2
	2								
	3								
	4								
TOTAL	g/sec								
	lb/hr								

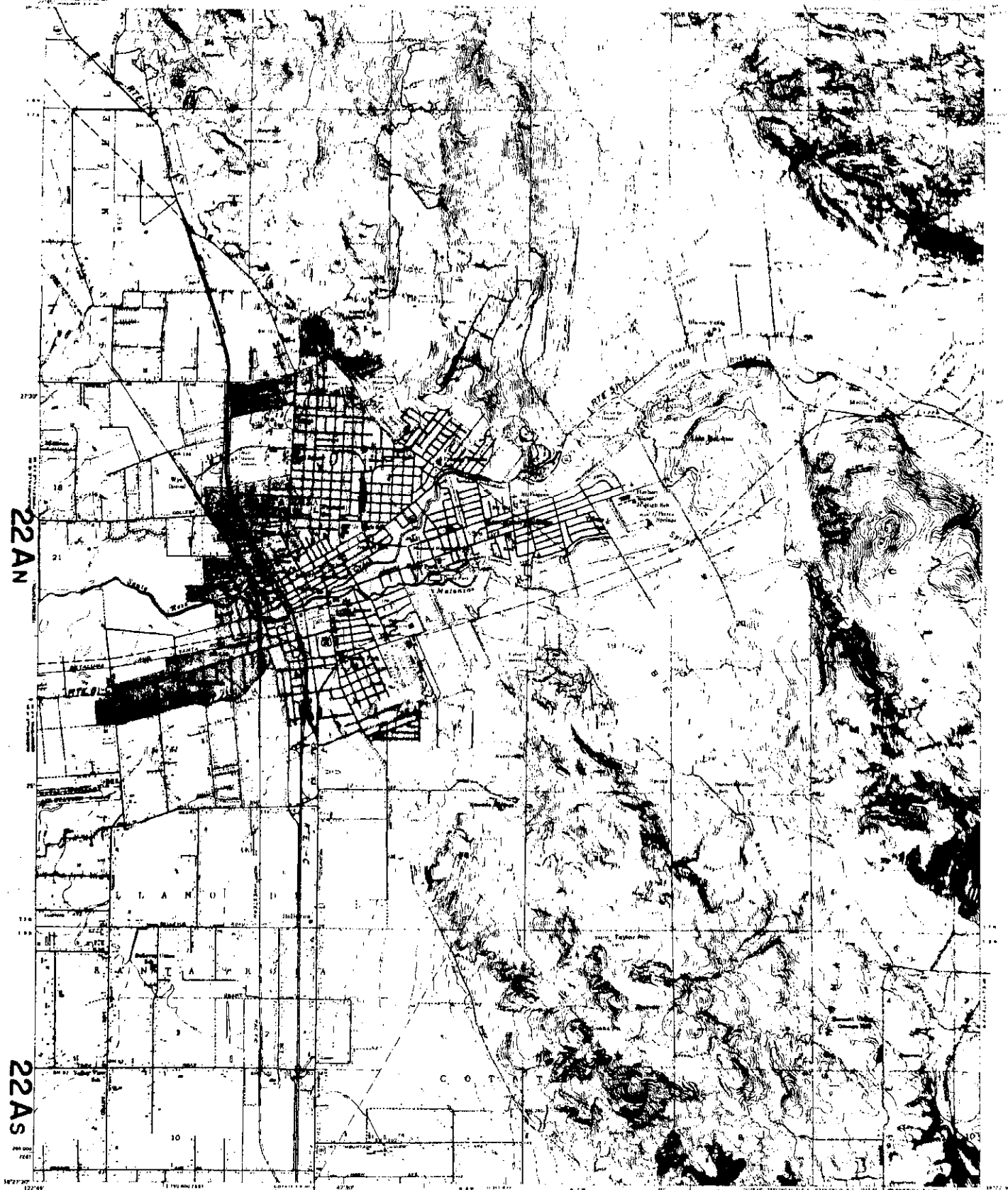
*1 CUBIC METER = 264.2 GALLONS.
†IF MORE THAN FOUR, ATTACH TABLE.

SIGNATURE AND TITLE _____, Manager

NAME (TYPED) Norman Mc Donald **PHONE** (707) 545 - 8740

DATE April 9, 1979

SANTA ROSA GRANFANGLE
CALIFORNIA SONOMA CO
7.5 MINUTE SERIES (TOPOGRAPHIC)
NORTH ARCTIC - 54 15 - 1100000 1000000



Downloaded by [IP: 141.202.112.11]

Interviews by Frank and I at Washington and by Judith at other locations
and by phone with Bureau 1954. Aerial photographs taken 1952

Polyethylene glycol. [M] North American edition
[U.K.] based on British counting system, size 7

Map 100 indicates areas in which only landmark buildings are shown.

Downloaded from <http://ajphaphapublications.org/>

of All - 1149

DOI: 10.1002/anie.200500000

$\phi_{\text{max}} = 0.78$

[illegible]

1. 10. 1944

NANIA RUGA, U

Figure 1. The effect of the concentration of the *Salmonella* suspension on the detection of *Salmonella* in the feces of the mice.

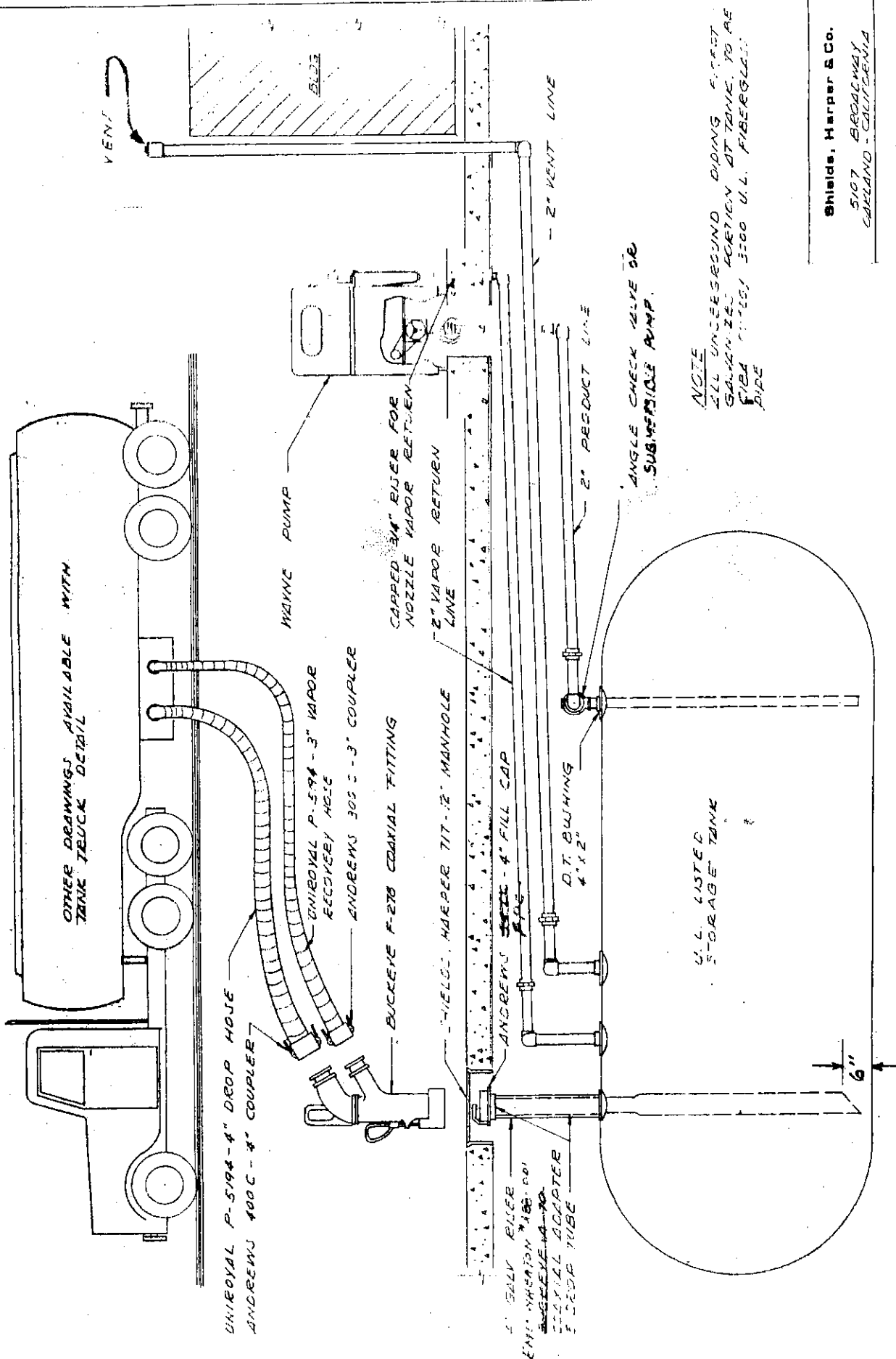
[illegible]

1400

SANTA RUQA, CALIF.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

1500



Shields, Harper & Co.
5107 BROADWAY
OAKLAND - CALIFORNIA

PIPING & EQUIPMENT
FOR SUCTION PUMP
W/ VAPOR RECOVERY

DATE - NONE

DATE 3-27-74 DWG NO. 32714

309'-0" ±

AC. PAVING

AC. PAVING

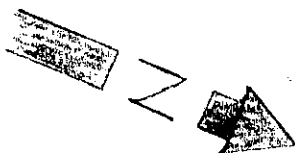
2000 GAL.
TANK

FOT

GASOLINE
PUMP

2" VENT

TIRE WAREHOUSE & OFFICE



SITE PLAN

DOWNEY TIRE CENTER
1400 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

309' 0" ±

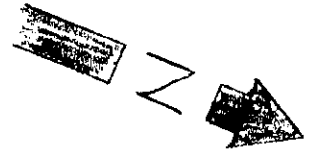
C.A.C. PAVING

C.A.C. PAVING

2000 GAL.
TANK
FOT
GASOLINE
PUMP

2' vent

TIRE WAREHOUSE & OFFICE



SITE PLAN
1" = 30'

DOWNNEY TIRE CENTER
1400 PETALUMA HILL ROAD
SANTA ROSA, CALIFORNIA

Appendix B: Purge Records

Appendix C:
Analytical Sciences Report: 29 August 2005



Report Date: August 24, 2005

Karin Fresnel
SCS Engineers
3645 Westwind Blvd.
Santa Rosa, CA 95403

LABORATORY REPORT

Project Name: **GK Hardt** **01203307.00**

Lab Project Number: **5081110**

This 4 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.
Laboratory Director



TPH Gasoline & MBTEX in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
31536	MW-101	TPH/Gasoline	1,100	50
		MTBE	13	2.5
		Benzene	5.8	0.5
		Toluene	ND	0.5
		Ethyl Benzene	100	0.5
		Xylenes	32	1.5

Date Sampled: 08/09/05	Date Analyzed: 08/15/05	QC Batch #: 5750
Date Received: 08/11/05	Method: EPA 5030/8015M/8020	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
31537	MW-102	TPH/Gasoline	220	50
		MTBE	ND	2.5
		Benzene	2.6	0.5
		Toluene	ND	0.5
		Ethyl Benzene	2.4	0.5
		Xylenes	1.8	1.5

Date Sampled: 08/09/05	Date Analyzed: 08/15/05	QC Batch #: 5750
Date Received: 08/11/05	Method: EPA 5030/8015M/8020	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
31438	MW-103	TPH/Gasoline	670	50
		MTBE	ND	2.5
		Benzene	25	0.5
		Toluene	2.8	0.5
		Ethyl Benzene	0.71	0.5
		Xylenes	2.7	1.5

Date Sampled: 08/09/05	Date Analyzed: 08/15/05	QC Batch #: 5750
Date Received: 08/11/05	Method: EPA 5030/8015M/8020	



Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
31539	MW-104	TPH/Gasoline	ND	50
		MTBE	ND	2.5
		Benzene	ND	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 08/09/05
Date Received: 08/11/05

Date Analyzed: 08/15/05
Method: EPA 5030/8015M/8020

QC Batch #: 5750

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
31540	MW-105	TPH/Gasoline	77	50
		MTBE	ND	2.5
		Benzene	0.61	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 08/09/05
Date Received: 08/11/05

Date Analyzed: 08/15/05
Method: EPA 5030/8015M/8020

QC Batch #: 5750



LABORATORY QUALITY ASSURANCE REPORT

QC Batch #: 5750

Lab Project #: 5081110

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
31480	CMS	TPH/Gas		NS	
	CMS	Benzene	9.85	10.0	98.5
	CMS	Toluene	10.2	10.0	102
	CMS	Ethyl Benzene	10.2	10.0	102
	CMS	Xylenes	31.6	30.0	105

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
31480	CMSD	TPH/Gas		NS		
	CMSD	Benzene	9.73	10.0	97.3	1.2
	CMSD	Toluene	10.0	10.0	100	1.5
	CMSD	Ethyl Benzene	10.1	10.0	101	0.93
	CMSD	Xylenes	31.3	30.0	104	0.95

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



Analytical Sciences
P.O. Box 750336, Petaluma, CA 94975-0336
110 Liberty Street, Petaluma, CA 94952
(707) 769-3128

CHAIN OF CUSTODY

CLIENT INFORMATION		BILLING INFORMATION	
COMPANY NAME: SCS ENGINEERS	CONTACT: Gladys Batts	LAB PROJECT NUMBER: 5081110	SCS ENGINEERS PROJECT NAME: GK Hardt
ADDRESS: 3645 WESTWIND BOULEVARD	COMPANY NAME: GK Hardt	SCS ENGINEERS PROJECT NUMBER: 01203307.00	
SANTA ROSA, CA 95403	ADDRESS: P.O. Box 510	TURNAROUND TIME (check one)	
CONTACT: Karin Fresnel	Santa Rosa, CA 95402	MOBILE LAB <input type="checkbox"/>	
PHONE#: (707) 546-9461	PHONE#: 544-8740	SAME DAY <input type="checkbox"/> 24 HOURS <input type="checkbox"/>	
FAX #: (707) 544-5769	FAX #: 544-8740	48 HOURS <input type="checkbox"/> 72 HOURS <input type="checkbox"/>	
		5 DAYS <input checked="" type="checkbox"/> NORMAL <input checked="" type="checkbox"/>	

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	TPH/GAS/BTEX & MTBE EPA 8015M/8020	TPH DIESEL / MOTOR OIL EPA 8015M	VOLATILE HYDROCARBONS EPA 8260 (FULL LIST)	EPA 8260 Fuel List + Oxy / Fuel Additives	BTEX & OXYGENATES + PB SCAVENGERS EPA 8260B	OXYGENATED FUEL ADDITIVES EPA 8260M	CHLORINATED SOLVENTS	SEM-VOLATILE HYDROCARBONS EPA 8270	TRPH / TOG SM 5520F / EPA 418.1M	PESTICIDES / PCB'S EPA 8081 / 8141 / 8082	CAM 17 METALS / 5 LUFT METALS	TOTAL LEAD	COMMENTS	LAB SAMPLE #
1	MW-101	8/9/05	1205	Liq	3	Yes	X													31536
2	MW-102		1230																	31537
3	MW-103		1215																	31538
4	MW-104		1155																	31539
5	MW-105		1230																	31540
6																				
7																				
8																				
9																				
10																				
11																				

SIGNATURES	
RELINQUISHED BY: Amy Vandenberg	DATE: 8/10/05 TIME: 10:30
RECEIVED BY: [Signature]	DATE: 8/11/05 TIME: 10:30
RELINQUISHED BY: Amy Vandenberg	DATE: 8/11/05 TIME: 10:30
RECEIVED BY: [Signature]	DATE: 8-11-05 TIME: 10:30

Appendix D: Geotracker Reports

REGULATORY HISTORY**LEISER, JACK (SANTA ROSA)**

532 ASTON WAY

SANTA ROSA , CA 95404

CASE STATUS: OPEN[SHOW THIS SITE ON MAP](#)[RETURN TO REPORT MAIN MENU](#)**REGIONAL BOARD (LEAD AGENCY) - CASE #: 1TSR383**

NORTH COAST RWQCB (REGION 1) - (JAT)

CONTACT: JIM TISCHLER - (707) 576-2220**LOCAL AGENCY**

SANTA ROSA, CITY OF

REGULATORY HISTORY**BEGIN DATE****STATUS**

3/6/2001	* Leak Discovery
3/23/2001	* Leak Reported
6/21/2001	1 - Leak Confirmation
6/21/2001	* System Entry
7/19/2001	* Directive Letter Sent
9/24/2001	3A - Preliminary Site Assessment Workplan Submitted
11/16/2001	* Directive Letter Sent

[Geotracker Home](#) | [Site/Facility Finder](#) | [Case Finder](#) | [MTBE/Case Reports](#)

REGULATORY HISTORY**TATUM, TIM (SANTA ROSA)**

706 ASTON AVENUE

SANTA ROSA , CA 95404

CASE STATUS: OPEN[SHOW THIS SITE ON MAP](#)[RETURN TO REPORT MAIN MENU](#)**REGIONAL BOARD (LEAD AGENCY) - CASE #: 1TSR207**

NORTH COAST RWQCB (REGION 1) - (JEF)

CONTACT: JOAN FLECK - (707) 576-2220**LOCAL AGENCY**

SANTA ROSA, CITY OF

REGULATORY HISTORY**BEGIN DATE****STATUS**

1/10/1992

* Leak Discovery

1/10/1992

* Leak Reported

1/10/1992

* Leak Stopped

1/17/1992

1 - Leak Confirmation

1/17/1992

* System Entry

1/17/1992

Regulatory Enforcement

2/14/1992

3A - Preliminary Site Assessment Workplan Submitted

5/15/1992

3B - Preliminary Site Assessment Underway

9/12/1994

5C - Pollution Characterization

1/3/2001

* Regulatory Review

[Geotracker Home](#) | [Site/Facility Finder](#) | [Case Finder](#) | [MTBE/Case Reports](#)

REGULATORY HISTORY**BAY BRIDGE GARAGE (SANTA ROSA)**

1426 PETALUMA HILL ROAD

SANTA ROSA , CA 95404

CASE STATUS: CLOSED[SHOW THIS SITE ON MAP](#)[RETURN TO REPORT MAIN MENU](#)**REGIONAL BOARD (LEAD AGENCY) - CASE #: 1TSR054**NORTH COAST RWQCB (REGION 1) - **(ZZZ)****CONTACT:** REGIONAL WATER BOARD SITE CLOSED - (707) 576-2220**LOCAL AGENCY**

SANTA ROSA, CITY OF

REGULATORY HISTORY**BEGIN DATE****STATUS**

5/9/1988	1 - Leak Confirmation
5/9/1988	* Leak Discovery
5/9/1988	* System Entry
5/9/1988	* Leak Reported
5/9/1988	* Leak Stopped
9/13/1989	Regulatory Enforcement
12/29/1993	3A - Preliminary Site Assessment Workplan Submitted
1/24/1994	3B - Preliminary Site Assessment Underway
1/17/1995	5C - Pollution Characterization
4/26/1996	5R - Remediation Plan
4/26/1996	7 - Remedial Action Underway
4/26/1996	8 - Verification Monitoring Underway
4/26/1996	9 - Case Closed
6/23/1997	* Regulatory Review

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REGULATORY HISTORY**JOHN'S TRANSMISSIONS INC (SANTA ROSA)**

1540 PETALUMA HILL ROAD

SANTA ROSA , CA 95404

CASE STATUS: CLOSED[SHOW THIS SITE ON MAP](#)[RETURN TO REPORT MAIN MENU](#)**REGIONAL BOARD (LEAD AGENCY) - CASE #: 1TSR292**NORTH COAST RWQCB (REGION 1) - **(ZZZ)****CONTACT:** REGIONAL WATER BOARD SITE CLOSED - (707) 576-2220**LOCAL AGENCY**

SANTA ROSA, CITY OF

REGULATORY HISTORY**BEGIN DATE****STATUS**

11/2/1994	1 - Leak Confirmation
11/2/1994	* Leak Discovery
11/2/1994	* System Entry
11/2/1994	Regulatory Enforcement
11/2/1994	* Leak Reported
11/2/1994	* Leak Stopped
4/1/1997	3A - Preliminary Site Assessment Workplan Submitted
4/22/1997	3B - Preliminary Site Assessment Underway
5/30/1997	5C - Pollution Characterization
5/30/1997	5R - Remediation Plan
5/30/1997	7 - Remedial Action Underway
10/2/1997	8 - Verification Monitoring Underway
10/3/1997	9 - Case Closed
1/12/2000	* Regulatory Review

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Appendix E:
Standard Soil and Water Sampling Procedures and
QA/QC Protocol

**STANDARD
SOIL AND WATER SAMPLING PROCEDURES
AND QA/QC PROTOCOL**

December 15, 2003

**SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS**

STANDARD SOIL SAMPLING PROCEDURES

The following outline describes the standard equipment and procedures used by SCS Engineers (SCS) personnel for the collection of soil samples for laboratory analysis.

Equipment

Modified California split-spoon drive sampler, standard penetration sampler, or direct push core barrel (Drill rig sampling)

Drive sampler (hand auger samples)

Typical 1.5-inch to 2.0-inch diameter by 6.0 inch long brass or stainless steel liners and plastic end-caps. Teflon sheets or aluminum foil will also be used for samples suspected of containing volatile compounds (gasoline, aromatic hydrocarbons, solvents, etc.)

Appropriate sample holders will be used for samples suspected of containing volatile compounds (gasoline, aromatic hydrocarbons, solvents, etc.) when EPA Method 5035 sampling is required by the regulatory agency. Standard sample containers will be used when field preservation occurs for EPA Method 5035 compliance.

Typical 1.5-inch to 2.5-inch diameter by 6.0 inch long plastic or metal liners for direct push core barrel.

PID organic vapor analyzer (OVA) or equivalent Field Detector

Sampler and Sample Container Cleaning Equipment:

- Stiff-bristle brushes

- Buckets

- Detergent (Non-phosphate detergent recommended)

- Deionized/potable water

Insulated sample storage and shipping containers (ice chests) and blue ice

Insulated sample storage and shipping containers (ice chests) and dry ice for EPA Method 5035 sample holders which cannot be delivered to the laboratory within 48 hours for preservation

Personal protective equipment (generally level D protection).

General Sampling Procedures

Soil samples are collected in accordance with regulatory guidance. Soil sampling procedures are updated as new guidance is provided by regulatory agencies.

Sampling equipment (i.e., sample liners, auger bits, sampling devices) are pre-washed as necessary with a brush in a detergent solution, followed by double rinsing with distilled or deionized water prior to each sampling event. All new sample liners will have been pre-washed prior to use. All

samples are collected in such a manner as to minimize the volatilization or oxidation due to agitation and/or mixing upon handling.

Soil samples collected by hand augering for lithologic logging, and for chemical and physical analyses are typically obtained by pounding the sample tube into the soil being tested. If an auger hole is drilled with a motorized drill rig, samples are typically collected using a drive sampler, which is driven approximately 18 to 24 inches below the depth of the auger bit. The sampling methodology may be adjusted on a case-by-case basis, depending on the suspected contaminant(s). Where required, EPA Method 5035 sample holders will be filled as rapidly as possible to prevent volatilization from either a sample sleeve or directly from the formation where feasible.

Soil samples collected from a backhoe bucket or from an accessible pit or excavation (ramped or shored) are collected by removing excess material to expose as fresh as possible soil. The sample liner is then pushed into the soil until the liner is full. Where required, EPA Method 5035 sample holders will be filled as rapidly as possible to prevent volatilization directly from the formation or from the backhoe bucket after a small amount of material is removed to expose a fresh surface where feasible.

Standard metal liners will be submitted for analysis in those circumstances where EPA Method 5035 sample holders are deemed to be unusable (gravel or extremely dense material). EPA Method 5035 preservation times will still be required of the laboratory.

When utilizing the split spoon sampler with a drill rig, the portions of the soil sample recovered in additional liners are also examined and noted for any contamination and/or changes in lithology.

The soils, when required, are classified in accordance with the Unified Soil Classification System (USCS). Sample liner ends selected for analysis are typically covered with teflon sheets and sealed with plastic end caps, stored in a cooler (4°C), and transported to a California Department of Health Services Certified Analytical Laboratory for the requested analyses (except where there is no State certification for the analysis being conducted). If storage is required prior to delivery to the laboratory or laboratory courier, the samples are stored in a secure refrigerator prior to delivery.

EPA Method 5035 sample holders used to comply with EPA Method 5035 sample collection procedures will be collected and stored in a cooler (4°C), and transported to a California Department of Health Services Certified Analytical Laboratory for preservation within 48 hours of sample collection. In the event the samples cannot be delivered to the Laboratory to meet the 48 hour preservation requirement, the samples will be placed in an ice chest with dry ice and kept frozen either in the ice chest with adequate dry ice or in a secure freezer until they can be delivered to the Laboratory for proper preservation. The Laboratory may receive the samples at the job site for field preservation, in which case standard sample tubes will be used.

All sample containers are labeled in the field. The sample labels will typically contain the following information:

- Sample identification number (including depth and stratigraphic position where applicable)
- Project name
- Project address
- Sampler initials
- Date of collection
- Other pertinent information

Chain-of-Custody documents are completed in the field and accompany the samples to the laboratory. The Chain-of-Custody document will typically contain the following information:

- Sample identification number (including depth and stratigraphic position where applicable)
- Project name
- Project address
- Project number
- Sampler (printed and signed)
- Date and time of collection (for each sample)
- Matrix type (soil, water, etc.)
- Analyses and turn-around-time requested
- Billing Information
- Other pertinent information

Stockpile Sampling

Discrete samples from thin stockpiles are collected in brass or stainless steel liners, by removing 6 inches to 1 foot of soil and driving the brass or stainless steel liner into the stockpile. Soil samples are collected from thick stockpiles containing volatile contaminants by either augering or otherwise excavating approximately one third to one half way into the pile and then driving the sample liner into the soil in the hole, or collecting a sample from the backhoe bucket. Surface or near surface samples will be collected from homogenized stockpiles containing non-volatile contaminants such as metals, motor oil, or oil and grease.

For final verification characterization, discrete soil samples will be collected at intervals required by regulation, or by the lead regulator for the disposal or treatment option selected.

EPA Method 5035 sampling procedures, as indicated above, will be followed for discrete and/or verification sampling when directed by the regulatory agency and/or the receiving facility. EPA Method 5035 sampling procedures, as described above, will not be followed for composite sampling for disposal unless directed by the landfill(s) in order to profile the soil for disposal.

STANDARD GROUNDWATER SAMPLING PROCEDURES

The following outline describes the standard equipment and procedures which are used by SCS personnel for the collection of groundwater samples for laboratory analysis.

Monitoring Well Development

After monitoring wells are installed and prior to initial sampling of the wells, well development is conducted. Well development is conducted to create an effective filter pack around the well screen, to optimize hydraulic communication between the formation and the well screen, and to assist in restoring the natural water quality near the well. Well development is also conducted to remove fines and to remove any foreign materials introduced during drilling.

Well development will be conducted as follows:

1. Record the static water level and total well depth.
2. Set the pump and record the pumping rate. Pump until the turbidity reaches the desired level, typically measured using a turbidity meter.
3. Discontinue pumping and begin surging using a properly designed surge block and proper surging technique.
4. Measure and record well depth to determine the amount of fines and repeat Step 2.
5. Repeat surging and pumping until the well yields water of acceptable turbidity at the beginning of a pumping cycle.

Depending on the depth of the water, the hydraulic conductivity of the aquifer, and the diameter of the well, pumping may effectively achieve well development. Wells completed in very silty geologic units also may produce consistently turbid samples. Wells of this type will normally be considered to have been properly installed and developed and turbid water samples will be considered representative of mobile constituents in the aquifer.

Monitoring Well Sampling

Groundwater sampling and evaluation of monitoring wells begins by removal of the well caps and measuring water levels in all monitoring wells at a site with a water level indicator. The fluid in the well is then monitored for the presence of free floating material. If free product is present in the well, its thickness is measured using an oil-water interface probe. A program of free product removal may be initiated. A groundwater sample is typically not collected from any well with confirmed free floating product unless a directive to do so is received from the regulatory agency. All monitoring wells are typically checked for free product until authorization has been received from the lead regulatory agency that checking for free product is no longer necessary. Water levels will continue to be checked until field measurements indicate that equilibrium has been achieved from which to compute the groundwater flow direction and gradient.

If free product is not present in the well being monitored, the well is purged, with groundwater parameters such as pH, conductivity, and temperature measured after each well volume removed. This process continues until parameters being measured such as pH, conductivity, and temperature, have generally stabilized (reproducible within 10%). As a general practice, a minimum of 3 well casing volumes or until the well goes dry constitutes adequate purging. For 2-inch diameter wells, a minimum of 5 gallons of water should be removed unless the well goes dry. Wells will be purged from least to most contaminated after the initial round of sampling. The purge pump will be placed near the top of the measured water table to assure that fresh water from the formation will move upward in the screen. Water will be purged from the well at a rate that does not cause recharge water to be excessively agitated. The purge pump will be lowered into the well as necessary to achieve the desired removal of groundwater.

Once a well has been adequately purged, a groundwater sample is collected using a disposable or pre-cleaned bailer. The groundwater sample is collected from the well in containers appropriate to the analyses being conducted. As examples, 1 liter amber bottles are used for diesel/motor oil/kerosene and oil and grease analyses, 40 milliliter volatile organic analysis vials are used for gasoline BTEX, 8010, 8240, and 8260 analyses, and plastic containers are used for total and/or dissolved metals. Volatile organic analysis vials will be immediately capped after collection and placed on ice to minimize loss of volatiles. All other groundwater sample containers collected will be capped and placed in a storage container in a timely manner and as appropriate for the analysis being conducted. Proper containers, sampling collection procedures, and storage requirements will be verified with the analytical laboratory prior to sample collection. Monitoring wells at a site are purged prior to collection of samples, unless the regulatory agency has approved non-purge samples.

After the wells have been adequately purged, they will be allowed to recover to 80% of their original volume prior to sampling. Any well purged to dryness will be sampled after a sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples. All collected groundwater samples are stored in an ice chest on blue ice and transported under Chain-of-Custody documentation. The samples are either transported directly to the analytical

laboratory on the day of collection, delivered to the laboratory courier on the day of collection, or are returned to SCS's office where they are stored in a secure refrigerator and then delivered to a California Department of Health Services Certified Analytical Laboratory or a laboratory courier for the requested analyses (except where there is no State certification for the analysis being conducted).

Every effort will be made to assure that sample storage will not exceed 72 hours before delivery of the samples to either the laboratory or the laboratory courier. Samples being analyzed for constituents with a longer holding time, such as metals, may be stored for a longer period of time, provided the holding time is not exceeded, before delivery to the laboratory.

Where more than one site is sampled on the same day by the sampler, samples from each site will be stored in separate ice chests. If feasible, samples suspected of being highly impacted will be stored separately from samples which are presumed to be clean. To the extent feasible, samples will be separated based on site and suspected degree of impact while awaiting delivery to or pick up by the analytical laboratory.

All purged fluid is stored on-site in DOT 55-gallon drums pending analysis. The drums and the fluid in the drums are the exclusive property and responsibility of the responsible party. SCS typically samples the drums and arranges for disposal at the appropriate time.

Grab Water Samples

Grab water samples may be collected from the pits, borings, discrete sampler borings, creeks, ponds, and any other bodies or vessels containing water. If the water sample can be safely collected by hand, it will be, otherwise, a disposable bailer will typically be used to collect the sample.

All collected grab water samples will be stored on ice and transported under Chain-of-Custody documentation. The samples will either be delivered directly to the analytical laboratory or to the analytical laboratory courier on the day of the collection, or they will be returned to SCS's office where they will be stored in a secure refrigerator a maximum of 72 hours, and then delivered to a California Department of Health Services Certified Analytical Laboratory for the requested analyses (except where there is no State certification for the analysis being conducted) or the laboratory courier. Again, samples being analyzed for constituents with a longer holding time, such as metals, may be stored for a longer period of time before delivery to the laboratory.

Typically, no purge water will be generated during grab water sampling. Should purging occur, the purge water will be stored on-site in either a DOT 55-gallon drum, or other appropriate vessel, pending analysis. Industry standards are that drums and all produced water are the exclusive property and responsibility of the responsible party. SCS will typically sample such containers and arrange for disposal at the appropriate time.

Sample Handling-QA/QC Elements

Sample Handling

The elapsed time between sample collection and delivery to the laboratory or the laboratory courier will typically not exceed 72 hours. Again, samples being analyzed for constituents with a longer holding time, such as metals, may be stored for a longer period of time before delivery to the laboratory, providing the holding time is not exceeded.

Sealed sample containers will only be opened by laboratory personnel during the specified sample extraction process.

Chain-of-Custody

In order to document and trace sample possession from time of collection, a Chain-of-Custody record will be filled out on the Chain-of-Custody document by the sampler for each sample collected. The Chain-of-Custody document will accompany the sample(s) through laboratory analysis. The completed Chain-of-Custody record for each sample will be included in the analytical report from the laboratory.

Blanks

Blanks will be used or collected as part of the sampling program at the discretion of the project manager and/or the lead regulatory agency. Trip and/or field blanks will be supplied and analyzed along with the samples, at the discretion of the project manager and/or the lead regulatory agency.

Modifications

Any modification to the standard sampling procedures and QA/QC protocol outlined in this document for either soil or water samples will be noted and fully explained in the sampling report.

PERSONAL PROTECTION

Sampling at environmental sites increases the chance of exposure of the sampling technician to chemicals which pose a threat to the environment and may pose a threat to the sampler's short-term and/or long-term health at the concentrations present. Each site will be evaluated prior to conducting any field work to ascertain the chemicals detected in the past, the chemicals likely to be detected in the future, and the likely concentrations of those chemicals to be detected. The chemicals will be evaluated for possible routes of exposure at the concentrations likely to be encountered. Appropriate personal protective equipment to prevent contact with contaminants shall be used. Appropriate chemical-specific gloves shall be worn and changed between sampling events.

In the event the sampler observes or detects activities occurring on or around the site which could cross contaminate collected samples, the sampler will suspend sampling until the activities which may lead to cross contamination cease. If necessary, the sampler will abort the sampling event. Any aborted sampling event will be rescheduled after the suspicious activities are indicated to have ceased, or the activities can be halted during the sampling event. Any suspension or aborting of sampling will be immediately reported to the appropriate registered professional.

Site-specific protection measures are outlined in the Site Health and Safety Plan, where active investigation and/or remediation is occurring.

Active Investigation and/or Remediation
(Refer to Site Specific Health and Safety Plan)

Required personal protective equipment:

Hardhats
Steel toed boots

Recommended personnel protective equipment:

Eye protection
Hearing protection
Gloves to protect against dermal contact with contaminants
Skin protection from sunlight
Photoionization detector/Gas Tech
Respirator (NIOSH approved with appropriate filters for contaminants detected or expected)
Detergent wash and rinse water
First aid kit
Fire extinguisher
Route map to and phone number of nearest hospital

As indicated above, each site must be evaluated on a case-by-case basis to determine the appropriate personal protection materials to use and personal protection activities to implement in the field. As an example, several sun tan lotions contain chemicals which are detected in the diesel range. Care must be taken to prevent cross contamination by sun tan lotion at diesel impacted sites.

Passive Investigation

Recommended personnel protective equipment:

Skin protection

Eye protection

Gloves to protect against dermal contact with contaminants

Detergent wash and rinse water

First aid kit

Fire extinguisher

Route map to and phone number of nearest hospital

As indicated above, each site must be evaluated on a case-by-case basis to determine the appropriate personal protection materials to use and personal protection activities to implement in the field. If a site is known to be heavily impacted, wells should be sampled from the cleanest to most impacted to minimize the potential for cross contamination. The potential for cross contamination can be further minimized by wearing disposable gloves and disposing of gloves after each sample is collected. As an alternative, hands can be washed and rinsed between each sampling event. Where contaminants are non-volatile and do not migrate readily, such as metals, personal protection can be modified to match the primary routes of exposure, which are inhalation and ingestion. In this case it may be appropriate to wear a dust mask if excessive dust is created during sampling. Washing of hands and face before eating or drinking is highly recommended. Protection of clothing by wearing Tyveks is also to be considered, along with washing clothing after each use in conditions where significant dust is created.

Personal protection is designed to prevent or minimize the exposure to the sampler of chemicals or substances which may adversely impact either the short-term or long-term health of the sampler. It is the sampler's responsibility to adequately protect themselves from exposure. All samplers are encouraged to protect themselves and their health to the extent feasible while in the field. All materials necessary to provide adequate protection are available and should be utilized as appropriate.

Cross contamination is to be minimized at all times while sampling. In some instances, proper use and implementation of personal protection will also aid in minimizing cross contamination. The sampler is very highly encouraged to implement proper personal protection, especially where it further minimizes the risk of cross contamination of samples.

Appendix F:
Site Health and Safety Plan
(Previously Submitted)